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THE PAPER TRADE JOURNAL.

"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XXIII.—NO. 26. NEW YORK, JUNE 30, 1894. WHOLE NUMBER 1052.

Trade Topics.

The Vertical Engine.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY W. H. WESTON.

It is probable that the vertical engine will be a very prominent form for stationary purposes, just as it has always been for marine work. It will be an advance in engineering when the vertical takes the place of the horizontal engine. Any change from the old-fashioned horizontal to the vertical type will of necessity be slow, as many people will hold tenaciously to the conventional style, and improvement in this line will be by small increments, the same as it always is in everything else. A few mill owners and manufacturers scattered here and there will be progressive enough to take advantage of an improvement, and others will follow slowly the example when it has proved a practical success. It has always been the case that the majority hold back and wait for some one who is smart and capable of looking ahead, to try and secure improvements.

In some positions and lines of work the vertical engine has come into very extended use during the past few years, not only in electrical power stations, but in various other positions, the type of engine being the inverted cylinder of comparatively short stroke, the old walking beam engine being of course out of the question, except for some special purposes. Most of the prominent engine builders at the present time will build the improved form of the vertical engine when wanted. Considered mechanically this is the only correct form in which to construct an engine, as it answers more requirements of good mechanical construction than the horizontal engine can do.

The advantages to be gained are greater and more marked in the large sizes of engine than in the small, it not being of so much moment which way an engine may be built for power less than 50 to 100 horse power; but for the large engines which are being used to-day, and also for moderate powers of a few hundred horse power, which are employed so extensively in various works throughout the country, the vertical type has advantages which should place it at the head of power equipments.

In putting in a steam power plant it is not always of importance to save floor space; yet there are many places where the area which can be economically used for the engines is very limited, as in cities where land is valuable, or, as sometimes happens, where power is to be supplied in a place which is already built on and only a small room can be spared for placing a new engine; but specially for a compound engine, where the condensers, circulating and air pumps take up a good proportion of the space, the saving in area taken by the engine itself is of much importance. Marine engineering shows clearly that a very large power can be effectively placed in a comparatively small and compact form.

The foundations for a vertical engine can usually be constructed at less cost for a given power than those of a horizontal engine of the same power. The various cap stones necessary for the latter are an expense of considerable account if the engine is properly set up, and this expense is avoided with the vertical type, for which they are not required as for the horizontal. As the foundation for a vertical is perfectly solid and compact, it has a great advantage over the other, which is usually of irregular form and often in separate parts, which render it far from being of proper strength and leave it very liable to cracking and loosening in course of time and throws undue strain on the ironwork of the engine. In vertical foundations their shape and solidity make them practically free from a tendency to give way or fail to stand the work put on them, provided they are properly put together. The vertical engine takes the strains of its work more direct than the other, because of its double frame and double crank. This is a matter of much importance, especially for large powers, the cylinders being evenly and squarely supported and the strains taken direct through the two frames to the shaft and the foundation; whereas with large cylinders on a horizontal engine with one side frame there is a lateral strain continually developed, which often gives trouble and tends to work the engine out of line.

Next, for much power it is necessary to have a double crank on an engine to prevent undue straining and springing of the shaft and bearings, this being especially necessary for short strokes, where the pressure on the cranks is very great. The double crank gives two bearings to take the given pressure at each revolution instead of one journal to support the whole of it, as in the case of the single crank, and the tendency of the single crank to spring out of line and twist sideways is entirely avoided by the double form. The connecting rod brasses and the journal brasses can be run snugger and kept to a much better fit and even bearing with the double crank. This is a matter of much importance in large engines.

Another point of great advantage about the vertical engine is that the upright position of the cylinders prevents excessive wear on them and the piston packing. One great fault that I have always found with the horizontal engine is the excessive wear which occurs in the cylinders, and this is practically unavoidable in this class of engine. The piston rod may be extended through the back head and have a guide to support its outer end, but this is a bungling affair and is ineffective to prevent the wear of the cylinder under practical circumstances. I have overhauled horizontal engines to give them repairs, in many instances where the cylinders were so worn as to be nowhere near a cylindrical form, the counterbore being entirely gone on the lower side and the bore of the cylinder oftentimes so low as to form a ridge at the place of counterbore in place of having clearance, all on account of the weight of the piston dragging on the cylinder. The only way to avoid this uneven and excessive wear is to place the cylinders in a vertical position, thus saving money in repairs and, what is vastly greater, preventing the continual loss of steam, which blows past a piston in a cylinder which is worn out of shape. This loss occurs in thousands of engines, and oftentimes where it is not suspected. No examination is made, and the engines run perhaps for years with the cylinders in bad shape. In engines of high power and large cylinders with these heavy pistons the only reasonable way is to set them vertically.

In the vertical engine the alignment of the cylinders will remain perfect, if so placed at first. This is of special importance in a tandem compound where one cylinder is placed above the other. In a horizontal tandem it is next to impossible to keep the cylinders in perfect line under ordinary circumstances. Cylinders out of line with each other or with the remainder of the engine are a serious source of trouble in running the engine and the cause of strains and excessive and uneven wear in all of the parts. After an engine is put in place and a mill is started up it is usually a heavy loss to have to come to a stop to overhaul the power.

Large engines of the vertical type are much more compact and solid than the horizontal form. And from the nature of their construction they are stronger and will not wear out as fast, while as to appearance they are much the handsomest. As to the cost of the vertical in comparison with the horizontal engine for given powers, probably if builders were as well supplied with the necessary patterns for the casting of all of the parts of various sizes of engines of this type as they are for the old style, the vertical could be built for the same cost per horse power as the other.

The Making of News.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY JAMES HALL.

(Concluded.)

Lessen the production of news and the price would go up like a shot. To the paper maker one-half cent a pound more for his product would be a God-send; it would lessen his anxiety and make him feel good, while it would not be very materially felt by the wealthy newspaper man. But if the production is still to go on by leaps and bounds, as it has done of late years, the end of it will be not merely the non-realization of dividends for anxious and expectant stockholders, but it will be the financial ruin of many large and hitherto successful papermaking industries, the collapse of which would be disastrous to everyone directly or indirectly connected therewith. It is therefore unwise to continue this ruinous business on the same lines. The time has gone by for "catching up" by increasing speed, by reducing the wages of the help, or by diminishing the cost of furnish to such an extent that in many cases the paper will barely hang together. Other and more drastic remedies will have to be applied, and the sooner the makers of news can realize this fact the better will it be for all concerned.

One of the first things to be done is that of combination for the protection of mutual interests. Other trades combine, and other branches of the paper trade, for the matter of that, and why not the makers of news? Until something of this kind is done it will be simply war to the death! It will be like the fight of the Kilkenny cats, which fought until nothing was left of either.

By combination makers could so control the market for news, as that paper should not be obtained at ruinous prices. Self-preservation is one of the first laws of nature; "All that a man hath will he give for his life," and now, when the successful commercial life of papermaking is fast ebbing, is the time to strike out a course which shall bring back the halcyon days of prosperity, and relieve many large corporations from their present financial embarassments.

If it is necessary to meet the ruinous competition of the age in this department to run machines at the very highest possible rates of speed; to run the mill within a few hours of the whole of the seven days to the week, leaving all repairs to be done in the quietude of Sunday, and to cheapen the cost of material to such an extent that the paper will not carry itself across the machine more than a few minutes before it is "all off," then I say, if all this is necessary, not simply to insure a profit, but to secure the maker from loss, the sooner this policy is abandoned and the better; the very converse of this is what is needed to put matters on a fair and reasonable basis.

It ought not to be difficult for news makers to enter into a combination, the great object of which should be to lessen the output. Make the article scarce in the market and the price will go up. It is purely a question of supply and demand. This could be done (1) by lessening the hours of labor, and (2) by reducing speeds. The first would give more time for repairs, and the second would give less occasion for them. The first would give more time for leisure and recreation to the help, and they would be fresher and more fitted for their duties; and the second would result in a better paper being made, with infinitely less broken.

Another object of the members of the combination should be to devise all measures necessary for the protection of their own interest. One of the most lamentable results of the fierce competition of late years in this branch of trade has been that makers have to a great extent lost the control of their own business and are at the mercy of their customers, and when that customer happens to be a wealthy newspaper proprietor his terms are sometimes very arbitrary and exacting.

One fact will suffice to illustrate what I mean. Formerly it was usual for a newspaper to pay for all of the paper it received from the mill. An invoice was made out specifying the gross weight of each peel, deducting a few pounds for the weight of the iron tube on which it was reeled, the newspaper being debited with the net weight of paper supplied, and for which payment was made without further deduction; but this is not so now. A change has been made in the modus operandi of doing these things, very much to the disadvantage of the paper maker.

Formerly the manufacturer of news could tell what he was going to receive for his delivery; now he cannot tell to a "multitude of dollars" what he is to have until the account comes to be paid; and this through no fault of his or that of the paper which he supplies.

In the machine room of a daily paper, where fast machines are used to meet the exigencies of a large circulation, it has come to be the practice, if the paper should "snap off" within a few inches of the bottom of the roll, to stop the machine, not to "piece up" and run on again until the roll is exhausted. No! this would not pay; it would lose time! So the roll is "clutched out" and a new one substituted.

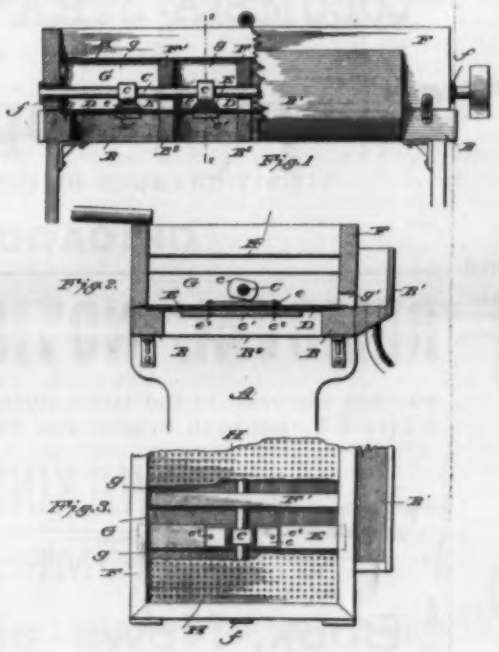
Of course it is easy to understand, from the newspaper man's point of view, that this is the best thing to do to save time; but what he does for his own convenience should be at his own expense and not at that of the paper maker. It is not so, however. These spools are returned to the mill with remnants of paper upon them amounting in some cases to 5 or 6 inches thick. If the paper maker was allowed to strip off these remnants and credit the newspaper with the weight of them at the price he is accustomed to pay for waste paper, there would be some show of fairness in the transaction; but the practice is very different to this. In the newspaper office a record is kept of the number of good sheets produced by the paper supply, and the paper maker receives payment for these, and these only, bearing the loss not only of all the waste from the causes above stated, but in addition to that the loss of all the "spoilage" made in the machine room.

How long this pernicious practice has been carried on I know not, only that it has now existed for a considerable time. It is one of the many evils arising from overproduction and the keen competition that follows in its train. The newspaper man is the master of the situation, and the paper maker has to submit, or let the order go past him.

The man who first agreed to this or silently submitted to such an injustice being practiced upon him should receive from his contemporaries a leather medal and be relegated to another sphere of labor.

If news makers combined and agreed to some uniform mode of action they might at once put a stop to such a gross act of injustice as the above, and which at the present moment they are utterly powerless to prevent. In a large mill the loss from this cause alone will be considerable, and in some cases where mills are being worked at a loss it is not simply so much deducted from the profit, but so much added to the loss.

I speak as unto wise men, judge ye what I say!



IMPROVEMENT IN PULP SCREENS.

Pulp Screen.

An illustration is given of an improvement in pulp screens which consists in providing the diaphragm of a pulp screen with springs adapted to move the diaphragm against the action of the cams on the operating shaft, the springs extending across the diaphragm so as to bear upon the side pieces of the frame of the pulp screen.

Figure 1 is a side view of a pulp screen, partly in section, showing the improvement applied thereto; Fig. 2 is a sectional view on the line 2—2 of Fig. 1, and Fig. 3 is a detail plan view, a part of the screen plate being broken away.

A designates the base of the pulp screen, the frame B of which is provided with a suitable trough, B', and with a series of transverse beams, B^2, which form supports for the diaphragm on each side of the compartments of the pulp chamber. Upon the frame B is secured the diaphragm D, which is of suitable flexible material, and across this diaphragm between the transverse beams B^2 are located springs, E, and upon these springs, are attached plates, e, against which the cam c on the operating shaft C bears. On the under side of the diaphragm beneath the springs are attached reinforcing strips, e'. The springs E and reinforcing strips e and e' are connected to the diaphragm by bolts or rivets, e^2.

F designates the upper frame of the pulp screen, to the side pieces of which are attached transverse partitions F', which divide the pulp chamber G into a series of compartments, g; these partitions lie immediately above the transverse beams B^2 and through the same passes the operating shaft C. The inner sides of the frame F are provided with ledges, to which is secured a perforated screen plate, H, this plate also resting upon the upper edges of the partitions F'. The end pieces of the frame F are provided with bearings $f\,f$ for the operating shaft C. The shaft is provided in each compartment of the pulp chamber with a cam, c, which when the shaft is turned is adapted to engage with the plates or strips e so as to vibrate the diaphragms. The frame F is connected to the frame B in any suitable manner, preferably by bolts so that the parts can be securely connected together.

Each compartment of the pulp chamber has an outlet opening, g,' which communicates with the trough B'.

In operation the pulp is fed into the screen above the perforated screen plate, and the shaft is driven so as to vibrate the diaphragms, which will cause the pulp to be drawn through the screen plate into the compartments of the pulp chamber, and it then finds its way to the trough, from which it may be conveyed to a suitable discharge pipe.

It will be noted that the diaphragms are partially supported by the springs, and that they are alternately vibrated, the cams being in different positions upon the shaft.

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Correspondence.

FOX RIVER VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., June 26, 1894.

Things were unusually quiet on the river last Saturday, that being the first day of the close down agreed upon by the paper manufacturing interests. The order went into effect from Neenah to DePere, and 16 per cent. of the usual product was thus curtailed. The only mill which was running in Appleton was that of the Patten Paper Company, but it will be closed down for two days next week to make up for it. Another meeting of the manufacturers is to be held this week, at which it will be decided whether the shut down shall be made for one or two days in the week. Col. H. A. Frambach, of Kaukauna, has received many letters from the East encouraging him to believe that reciprocal action will be taken there.

One important item of news which escaped your correspondent last week was the burning of the warehouse of the Paul Paper Company, at Menasha, which occurred on the night of June 16. The warehouse was a frame building, and during a heavy storm it was struck by lightning and totally consumed. The building was full of paper shavings and finished product, and not a pound of anything was got out of it. The Paul Paper Company estimates its loss at $12,000, with $8.000 insurance. In addition to the loss of the Paul people the firm of Felix Salomon & Co., of New York, loses a lot of rags which were stored in the warehouse, the value of which is not accurately known. The rags were sent to one of the firms at Menasha a year or two ago, and by them refused, since which time they have been in the warehouse. They were insured for $2,500, but the insurance ran out in April, so that they are now a total loss. The fire was very hot, and for a considerable time it seemed as though the mill and everything must go, but hard work saved it. The company is now moving a couple of neighboring buildings to positions near the mill to act as temporary warehouses.

The Paul people have just received their new 300 horse power compound condensing engine, and it is now being set up in their new engine house. The mill will be shut down for a week in July in order to make the necessary connections.

President Paul, of this company, showed your correspondent a sample of a very strong white paper of peculiar texture, which he said he is making for New York parties, who make paper lace of it. The mill is making quite a specialty of it, and it is meeting with ready sale.

Col. H. A. Frambach, of Kaukauna, says that the problem of a practical suction roll has at length been solved, and one is now in operation at the mill of the Badger Paper Company at Kaukauna. It is the invention of one of the company's employees, assisted by suggestions from Colonel Frambach, who is a man of no little inventive genius himself. The invention is now in operation on a pulp machine, and is suited for all heavy pulp and board cylinder machines. It does its work perfectly.

The Whiting Paper Company, of Menasha, is just putting in a new screen made by the Beloit Iron Works. The new office building, from which is to be transacted all of the work of the Menasha and Wisconsin River mills, was completed this week and the company is now occupying it, much to its comfort and enjoyment. The building is of handsome red brick, finished inside entirely in quartered oak, and is a model of convenience and luxury. There is a main office room, a private office, a stout vault and a toilet room. Five people will be employed in the offices.

During the sudden and violent storm of last Saturday evening, when the Paul warehouse was struck by lightning, a party of Neenah and Menasha paper makers and their friends had a very narrow escape on Lake Winnebago. They were out fishing and pleasure seeking in small boats, and the storm came up so quickly that they were able to get to shore only with great difficulty. Among the party were Messrs. Gilbert, Stuart, Kimberly, Wright and others, besides some representatives of the trade from outside the valley. The loss of these men would have made quite a hole in the trade.

John Strange has razed to the ground the old warehouse which has for so long been an eyesore in front of his mill at Menasha. As soon as he builds that fine office he has been talking about so long, he will distinctly be "in it." A new railroad side track has been put in at the mill, which will much increase the convenience of handling things.

The new daily paper at Menasha which Mr. Strange is backing has appeared. It is called the Menasha *Breeze*, and is proving itself a cyclone to the fossilized sheets which have held the fort so long in the Twin Cities. The *Breeze* is a little short on advertising yet, but is long in the essentials which make up a newspaper, and it deserves to do well.

Contractor Frank Perry, of the "Soo," expects to receive his first raft of pulp wood in Green Bay about July 6, and thereafter the rafts will come along as fast as they can be brought.

Supt. Geo. Friend, of the Howard Paper Company, of Menasha, is getting shaken down to his new position and is making many friends and is feeling more at home himself. On one of those very hot days a couple of weeks ago, when the thermometer was indicating all that it dared to, Will Gilbert was on his way home, and as he made his way by the office of the Howard people he looked in and saw George steaming there with his feet cocked up on the radiator and the water running off him as though he was in a Turkish bath. Through some mistake the valve had been left open and the radiator was booming as in the midst of winter. It might not have been discovered then if Will had not accidentally burned his fingers on the hot iron.

John Lowe, a paper maker from England, has been in the valley of late looking into American methods of paper making.

A. L. Smith, Jr., general manager of the Manufacturing Investment Company, is at home for a couple of weeks from Madison, Me., where he is supervising the remodeling of the mill. The points which have been found so successful in the Appleton plant are being incorporated there and the result can hardly fail to be most favorable.

Geo. Humphrey, who has been at the Appleton plant of this company for several weeks, has returned to Madison.

Martin N. Nixon, now of Philadelphia, has been calling on friends in the valley within the past week.

Geo. W. Moser, of the Moser-Burgess Paper Company, of Chicago, has been visiting friends in Neenah for a couple of weeks and taking in the fishing for which Neenah is famous. He has had phenomenal luck with bass—particularly the Rocky Mountain kind.

FOX RIVER.

MIAMI VALLEY.

[FROM OUR REGULAR CORRESPONDENT.]

DAYTON, Ohio, June 27, 1894.

Midsummer dullness prevails in this section this week. It is a very difficult matter even to locate a paper manufacturer during this siege of torridity. Added to the quiet and inactivity which accrued during the prolonged depression in business circles, you have a situation tinged with the melancholic, draped with the weird, bordered with the funereal, but withal the outlook is bedighted with a faint ray of hope—but hope which knoweth no means of immediate realization.

The chief topic of conversation among the paper manufacturers is that of the proposed ship canal. They all think that Senator Brice's action in starting the preliminary work should be greatly commended. The bill which he introduced in the Senate authorises the Secretary of War to make a survey of the Miami and Erie canal and give estimates of the costs of deepening and widening it, so that it shall not be less than twenty feet wide at the water line and not less than seven feet in depth of water; to be furnished with new locks not less than 120 feet in length and twenty-one feet in width, and to have a capacity for vessels of at least 280 tons burden.

Mr. Brice approves of an appropriation of $25,000, or as much thereof as may prove necessary. However, his bill provides that nothing in it shall be construed to commit the Government to proceed with the construction of the improvement.

Cincinnati, Hamilton, Middletown and Dayton have taken a lively interest in the matter the various boards of trade of each city having scored some action thereon.

A paper manufacturer in discussing the improvement the other day said:

"There is little doubt that the Miami and Erie Canal route possesses advantages over any of the proposed routes. In the first place the Ohio River, from Cincinnati south, is navigable at all times of the year, a condition which does not exist below any of the other routes already mentioned.

"You will bear in mind that the canal starts in one of the principal cities of the Northern part of the State, passes through the principal ones of the interior and empties into the Ohio River at the State's metropolis. Thus the commercial advantages are by far the most important to be derived from any route that has been called to my attention. Then consider, if you will, that Cincinnati is the greatest railroad centre leading into the South and West; it is evident that a larger proportion of the country would be benefited."

All of the various organizations have forwarded or will forward copies of resolutions adopted to the House and Senate. It is the desire to secure the appropriation, and if the survey is practical and made on a basis of equity it is reasonable to presume that this valley stands a good show.

Two notable weddings have taken place in this city the past week which marked an epoch in the local social world. R. R. Dickey, Jr., secretary of the Dayton Globe Iron Works, was married to Miss Thacker, daughter of a wealthy wholesale merchant. Immediately preceding this event came the nuptials of John V. Lytte, secretary of the police board, to Miss Crume, daughter of W. E. Crume, the paper novelty manufacturer. Both couples are now spending their honeymoon afar. Mr. Dickey and his bride will remain three months abroad.

The formal announcement of the engagement of Harrie Clegg to Lola Crume, another daughter of W. E. Crume, was made the other evening. Mr. Clegg is the scion of an opulent street railroad magnate of this city.

Prior to their departure for Europe the other night Edward Reynolds, of the Reynolds & Reynolds Company, and Chas. Graves were tendered a complimentary dinner at the Dayton Club by Chas. H. Simms, manager of the *Times and News*, and Geo. G. Shaw, secretary of the Dayton Paper Novelty Company. Thus "society in the paper trade" has received a notable impetus.

It is understood that the Haldeman Paper Company, of Lockland, will rebuild the mill which was badly damaged by fire a few weeks ago. This is pleasant news, and it is hoped that the improvement will be pushed to a speedy consummation.

The water was let out of the hydraulic this week, which compelled a temporary suspension on the part of the Mead Paper Company. The hydraulic is usually emptied at this time of the year to admit of the progress of much needed repairs. The paper mills had been closed on account of the scarcity of coal, but upon receipt of the information that the hydraulic would undergo repairs it was found necessary to resume once more.

Charles F. Gunckel, of Middletown, won a victory in the Butler County courts the other day in the case of the Citizens' National Bank, of Lebanon, *v.* the Middletown Gas Company, asking for a receiver. The fight was not made on the original application as much as on the answers and cross petitions of G. N. Clapp and I. N. Woods, well known and identified with the paper trade. The claim of the bank amounted to $1,800 or $1,900 and was compromised before the decision. The court decided that the works were completely managed by Mr. Gunckel and that probably the whole of the floating debt would be paid in twelve months. None of the debt for electric light bonds is due until 1899, and the court held that Mr. Clapp could not apply for a receiver as an indorser as the bonds were not yet due, while Mr. Woods, being a common stockholder, was likewise prevented.

Col. Harry Mead was a delegate to the Circuit Court Judicial Convention held at the Park Theatre the other day. In the assemblage of 200 delegates from seven or eight counties he was the only paper manufacturer who enjoyed himself. He, with "Doc" Lowes, who wields an influence not unlike that exerted by the late Tammany king, Croker, reviewed the situation coolly, although the mercury was hunting the 100th degree and the secretaries had recorded the twenty-fifth hot ballot. The colonel is quite a factor in the political arena.

The Xenia Paper Mill has closed on account of the scarcity of coal. The G. H. Friend Paper Company's plant at West Carrollton was shut down for a short time also from this reason. However work has been so regularly active at this concern that a temporary suspension is unusual.

By order of the court Trustee Boyd, of the Louis Snider's Sons Company was given authority to sell a portion of the stock of a certain brand of paper on hand this week for the benefit of creditors.

The Rockdale Mill, owned jointly by the Haldeman Paper Company, Lockland, and the American Strawboard Company, was burned down last night. The mill was completely destroyed, as there were no facilities for battling the flames. It is supposed that lightning did the work, and inasmuch as the flames first preyed upon the boiler room the pumps were rendered useless and the water supply was crippled. The Haldeman Paper Company has been operating the mill, but for purposes other than for the manufacture of strawboard. The loss is estimated at $30,000, and while the American Strawboard Company may be well insured, only

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$8,000 on buildings were placed by the Haldeman Company with agencies as follows: Ætna, $2,500; Home of New York, $2,000; Northern, $2,000, and the Greenwich Insurance Company, $1,500. It is scarcely probable that the mill will be rebuilt. M. V.

HOLYOKE.

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., June 28, 1894.

There is nothing new that can be said regarding the state of trade this week. Everybody fully realizes that business is terribly dull, and that there is no immediate prospect of a change for the better. Most manufacturers gave up looking for that some time ago. The mills are all running, to be sure, but very few are on full time, and most of them are short of orders.

The call for all kinds of finished goods is decidedly limited, and those who have a sizable order to place are welcomed with open arms. Prices are somewhat uncertain, and most manufacturers who see the means at hand to keep their machines running will not let the price stand in the way.

There are perhaps half a dozen mills which have managed to run on full time for quite a while, but more are running on two-thirds or one-half time. The manfacturers as a rule are determined not to accumulate a stock of finished goods in such uncertain times as the present, therefore they govern themselves accordingly. The market is weak and uncertain, and likely to remain so for the present.

Col. Platt, who is guiding the destiny of the Denver Paper Company, met the local stockholders a few days ago and gave them a very comprehensive idea of the manner in which their money is being used, and his visit here was very satisfactory. Considerable Holyoke money has been invested in this industry, and the Colonel is very enthusiastic in regard to the future. The news mill is producing about 20 tons a day and is selling the goods. The sulphite mill is also in full operation and the book and fine writings mill was reported to be doing a very satisfactory business. There is every reason to believe that when business has resumed its normal condition the company will prosper.

The Whiting No. 2 Mill was shut down Saturday night, and will not be started again before the middle of September. On Monday morning a force of workmen began work on the long contemplated improvements.

The recent census of the school authorities shows that the present population of this city is 40,549, against 40,864 one year ago, a decrease of 315. This is something entirely new for Holyoke, as we have never shown a decrease in any year since the place was founded. During the past five years we have grown at a rate of 2,000 souls a year. The decrease is because of the return of many French Canadians to the Provinces on account of the hard times.

The Newton Paper Company has made this corporation return: Fixed capital $72,000; capital paid in, $72,000. Assets—Land and water power, $20,000; buildings, $36,000; machinery, $35,000; cash and debts receivable, $23,772; manufactures and merchandise, $23,707; total, $138,480. Liabilities—Capital stock, $72,000; debts, $21,081; profit and loss, $30,448; reserve for depreciation, $15,000; total, $138,480.

The labor trouble which has existed in the Holyoke Hydrant and Iron Works for the past three years has just been settled, and the factory is again a union one. A new foreman, F. C. Wheeler, recently employed by the Deane Steam Pump Company, has assumed charge of the molding department, the place where the trouble originated, and W. W. Wilson, for some time master mechanic for the George R. Dickinson Paper Company, becomes superintendent.

C. E. Torrence, president of the company, who took an active part against the strikers, will now give his attention to the outside affairs of his company.

Eagle Lodge of Paper Makers is anticipating a larger attendance at the annual excursion and field day at Lake Congamond on July 4 than ever. Prizes for athletic events amounting to $150 have been offered.

The mill nines are furnishing sport for the crowd and business for the physicians just now. The Holyoke Envelope Company's nine defeated a nine from the Lyman Mills on Saturday by a score of 18 to 7.

C. H. Davenport, Jr., and wife, of South Hadley Falls have just returned from their wedding trip.

The weather this week is exceedingly hot. H.

BOSTON.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE PAPER TRADE JOURNAL,
67 FEDERAL STREET,
BOSTON, June 28, 1894.

Concerning the present condition of business, there is little to report of an encouraging nature. As usual at this season of the year the paper business is very quiet, yet jobbers are buying more paper now than they did some months ago.

Dealers in mill supplies have had pretty dull business for many long months, and while no improvement is noticeable the opinion prevails that a change for the better is not so very far distant.

When talking with business men on the trade outlook conversation always drifts to the pending tariff legislation and the financial condition of the country. Money, it is claimed, is now in plentiful supply and easily obtainable for any legitimate business need, and it is reasoned that when the tariff question is settled the beginning of a business revival will set in.

With general business improved it most certainly looks to those interested in paper as if a good active trade in this line is among the early possibilities. Some local paper dealers say that they expect by the first of August to feel the effects of the improved condition of things, and when once started trade will continue to develop and increase right along until checked by unforeseen factors. That argument seems sound. Will the facts justify the assertion?

On July 1 a new contract must be made by the Secretary of State for furnishing paper for the coming twelve months to the State Printer. The Rice-Kendall Company is supplying the paper now, and it is generally thought that the contract for another year will be awarded to the same house.

Stanton Day, president of the Moosehead Pulp and Paper Company, Solon, Me., was seen in town to-day en route for New York.

Mr. Day tells me that his pulp mill is shut down and undergoing repairs.

The home demand for ground wood pulp is rather limited and prices are "'way off." Even the export trade in pulp has been curtailed by low prices abroad. Shipments now being made are on old contracts, and these contracts will be filled during the next thirty days. Future exports of pulp are said to be problematic and dependent on prices ruling abroad.

Among recent trade visitors in town were Charles R. Milliken, of Portland, Me.; J. Fred. Webster, of Bangor, Me.; E. L. Gedney, of Brunswick, Me.; Frank P. Carpenter, of Manchester, N. H.; A. N. Lowe, of Fitchburg, Mass.; P. L. Barrett, of Lowell, Mass.; Charles S. Mayo, of Lawrence, Mass.; John D. Carson, of Dalton, Mass.; Fred. Temple, of Pepperell, Mass.; Edward E. Bill, of Springfield, Mass.; Henry C. Hurlbut, of South Lee, Mass.; I. V. Sutphin and William Stuart, of Cincinnati; S. Goldman and J. Wallace, of New York.

Yes, "Dandy," the American Paper Manufacturers' Association is going to Saratoga again, or rather some of the members of that organization will meet at the Grand Union Hotel on July 25, and have as good a time as conditions will justify.

The calling of the convention and the perfecting of arrangements for the entertainment and comfort of guests is the duty of the secretary, but no one member of the association considers it his duty to be present at the convention. It has always been a matter of comment that the conventions have been so poorly attended. Certain routine business has to be done, the most important of which is the election of officers, and when the badges of office are thus transferred the retiring officials are always thankful and show a feeling akin to pity for their honored successors.

The association will sit in convention if there is a quorum present; members and their friends will dine together in the banquet hall; they will partake of the waters of the springs, the spirits of the bar, do the races and handle chips; but the association will not be entertained by any side show this year in the way of an exhibition of paper mill appliances. Nor will there be any display showing the products of paper, unless perchance a few paper collars may be seen. Such matters require time to work up and thought to bring the display to perfection, and the encouragement of members by their appreciation of the exhibits is necessary in order to inspire the promoter of such displays with courage and good heart to undertake the work and carry it to a creditable end.

No one has worked more conscientiously to produce beneficial results or to inaugurate features calculated to promote the interests of the association than has William T. Barker, the secretary; but the association does not seem to encourage any efforts in that direction. Reforms within the association cannot be effected, trade abuses cannot be remedied by action of the convention. These matters must be left to individual efforts subject to the old theory of the "survival of the fittest."

The duties of the next secretary will be all the easier if he will profit by the lessons of the past. Who is to be the next secretary? Mr. Barker cannot serve another year. His labors in connection with his several manufacturing interests take his entire time, so that he finds it very difficult to attend to association business. So the election of a new secretary is now in order. Prepare your candidate for nomination.

Saratoga may be a hot place in July, but it cannot be any hotter than it is in Boston this very day. DELESDERNIER.

CHICAGO.

[FROM OUR REGULAR CORRESPONDENT.]

WESTERN OFFICE PAPER TRADE JOURNAL,
56 and 58 La Salle Street,
CHICAGO, Ill., June 27, 1894.

As we "never know how long a snake is until he is dead," no comparison of June business with that of the month immediately preceding or with that of June, 1893, can yet be made, but as all the paper men say that trade is quiet, or at best not more than fair, no great showing can be anticipated when the totals for the month come to be cast up. This is more apparent when we take into consideration that the usual summer dullness is now upon us, that orders from newspapers are falling off, and that various causes incidental to the season combine to lessen the demand.

The principal factor in the situation just now seems to be the action of the Wisconsin mills in shutting down two days in the week until further notice. The general consensus of opinion among paper men is that this movement will have a good effect, even should the committee appointed to confer with Eastern mills not be successful in bringing about a similar state of things in that section, although it is hoped and believed that it will be. Some individual opinions are subjoined.

One representative man says: "The trouble has arisen from running too many mills too many days at too high a rate of speed, therefore even a partial shut down must do good." Another says: "The movement will benefit the mills by saving expenses, if in no other way, as they can fill all their orders by a four days' run just as well as by six. There is no contest between East and West. People are buying all that they want, though unfortunately their wants are limited. I don't believe that the mills which are well off have anything to gain by forcing the market, or that they are greatly to blame for the present depression; it is the product of the mills started after the limit of necessary production had been reached, which has demoralized the market, and the market is demoralized much more than some members of the trade realize."

Another: "The Eastern mills ought to join hands with those of the West, as they are equally hard up for orders. It is dull now, vacation time is coming on, and it is in every way a good time to shut down. I hope the conference committee may be successful."

Yet another: "As there is no great accumulation of stock on hand, but only too great production from week to week, even a partial closing must be beneficial. Moreover, the mills must close before very long willy nilly; for as the ice moved out so early this spring, and no great floods are to be expected now to replenish the streams from which they draw their water power, an early drought is inevitable, and then it will be a case of Hobson's choice. I confidently believe that this fact, coupled with the low stocks now on hand, will cause a very material stiffening of prices by September at farthest."

Another remarked: "Many of the Eastern mills will close voluntarily. The great difficulty is that there are too many mills. Even if there were no surplus there is too much production for these times. The mills must compete. Combination into a monopoly, as in the case of oil, flour and other great industries, is impossible. The variety of product is too great for that and the interests are too diverse. Should the news mills, for example, combine, the writing mills would make news paper and vice versa. The strawboard people have tried the combination plan, and their branch of paper manufacture is worse off to-day than any other. No; our mills must continue to fight it out so long as they keep running; therefore I say that a shut down for two days in the week, as limiting production one-third for all who join in it, and to that extent affording some solution of the difficulty, cannot but have a good effect."

Here is what was said by one gentleman whose views differ quite radically from those of all the rest: "A two days in the week shut down is a mere farce. To combine all the mills, both East and West, in an agreement to close altogether for thirty or sixty days, allowing only such to run as have contracts with daily papers, and even those for no other purpose, would be a good thing for the trade; but the present movement will amount to nothing. Eastern mills will take advantage of the situation, and will run over us if we yield. Our Western manufacturers must not be frightened, but go down into their pockets and fight to a finish. Better die fighting than perish slowly. Wounds in front are better than in the back; but we shall not die. We have the advantage of 10 cents a hundredweight in freight, and can lick 'em if we stick to it. Several big mills did not go into the movement, and will not. Some are supplying daily papers and (having no accumulation of stock) cannot stop; others are determined to make the fight on lines laid down above."

Time, and not very long time either, will show whether the majority or the minority view of this question is right; meanwhile the readers of THE JOURNAL can form their own opinions.

The following dispatch appeared yesterday in the city dailies: "Piqua, Ohio, June 25—An important meeting of the manufacturers of strawboard has been in session in this city for the past four days trying to come to some pool agreement. The independent manufacturers are represented by J. F. Spaulding, of Boston; Rush Evans, of Chicago, and L. Leonard, of this city. The American strawboard trust is represented by Vice-Presidents R. F. Newcomb and J. H. Swinarton, of Chicago, and Treasurer W. P. Orr, of this city. So far no agreement has been reached."

Inquiry at the office of the American Strawboard Company to-day, and also of several gentlemen interested in the independent mills, elicits the information that the meeting adjourned yesterday without having accomplished anything, all parties remaining—to borrow a military term—"as they were."

The new Paper Commission Company has chosen its board of active directors as follows: Chas. A. Chapin, of Niles, Mich.; E. A. Jacks, also of Niles; A. S. Trentman, of Fort Wayne, Ind.; J. A. Hill, E. Stein and Peter Hinkle, all of Chicago, and Philo D. Beard, of Buffalo, N. Y. Of these Mr. Beard has been elected president of the company, and Mr. Stein treasurer and acting secretary. J. B. Halliday is manager of sales.

Straw paper is now selling at about $21 per ton. All of this advance from the previously quoted low figures, however, with the exception of about $2, had taken place, owing to the coal famine, before the organization of the new company, whose officers disclaim any intention to affix unduly high prices.

F. E. Lyster, formerly the representative of the Lockwood Press at this point, has recently been on a fortnight's visit here as the guest of Geo. H. Taylor, the two gentlemen having been intimate friends from the beginning of Mr. Lyster's Chicago career.

Mr. Lyster is looking very well, and has about him that undefinable air of prosperity and contentment which would seem to confirm the many reports that he is amassing a fortune in his new field, viz., as a member of the firm of Clark & Lyster, linseed oil manufacturers, Fredonia, Kan.

Mr. Lyster was gladly welcomed by his many old friends here, more than one of whom would have been glad to occupy Mr. Taylor's position as his host.

Saturday, the 16th inst., came near witnessing the end of two of the brightest lights of the Western paper trade. About 4 o'clock in the afternoon of that day two yachts set out together from Neenah, Wis., for a few hours' sail on Lake Winnebago. In one were James Kimberly, of Neenah, and J. S. Gittens, of De Pere; in the other W. Z. Stuart, of Neenah, and A. T. Hodge, of Chicago. About 7 o'clock, as they were gliding delightfully southward with a good quartering breeze from the east, a heavy, black cloud suddenly appeared in the west. The first named boat, being half a mile or so nearer the shore, succeeded in escaping from the worst of the coming storm; but the two gentlemen in the other had just time to haul in sail and throw the anchor overboard when the easterly breeze, which had a few moments before afforded them so much pleasure, was met by a mighty wind from the on-rushing western cloud, and they were caught in the vortex of a whirlwind. The cyclone—for it was nothing less—was terrific while it lasted, and their boat spun around like a top.

For some time (it seemed hours) the anchor dragged, and it looked as though each moment might be their last. Mr. Stuart did his best to keep the boat's head to the wind, while Mr. Hodge grasped the life preservers. One he held between his knees (it was impossible to let go his hold on the boat with both hands so as to adjust it properly around his body), while he passed the other to Mr. Stuart, who seized and held it in his teeth. At last the anchor caught, the wind gradually subsided and the return waves bore them nearer and nearer to shore. This progress they aided as well as they could by frequently throwing the anchor as far shoreward as possible and then hauling in the cable hand over hand. When, after working this way for some time, they found weeds floating around them and soon after found that they could touch bottom with an oar they were greatly relieved, and it was not long before they were safe on shore. That the boat was not capsized and both men drowned is a miracle.

Mr. Hodge (who would say nothing about the matter until I had heard of it from another quarter, and then gave the above details only after the closest questioning), with characteristic modesty gives all the credit of the affair to his friend Stuart's superior seamanship; but both must have been nervy and game to the backbone, else they would have lost their heads in such deadly peril. It was one of the worst electrical storms ever known in these parts. The lightning was continuous — not in flashes — and the combined roar of the thunder and the wind was such that for awhile they could not hear each other's voices, although shouting to the top of their bent.

The struggle on the water lasted about an hour, it being 8 o'clock, when they found themselves safe at last on terra firma. How long it all seemed neither gentlemen would like to estimate, but it was an experience which neither would like to repeat.

Barring a few bruises and abrasions and sore muscles each was apparently as well as ever on Monday morning and attending to business as usual, as calmly and serenely as though nothing had happened.

George Moser, of the Moser-Burgess Paper Company, Chicago, was also in the same storm in company with Wm. M. Gilbert, of the Gilbert Paper Company, Menasha. They were in a larger boat, however, and did not get the full violence of the wind, being on a part of the lake slightly visited by the storm.

James T. Mix, of the firm of Geo. H. Taylor & Co., whose health for some weeks past has been none of the best, is recuperating at West Baden Springs, Ind.

Elmer Ustick, the Chicago representative of Taggarts Brothers, Watertown, N. Y.,

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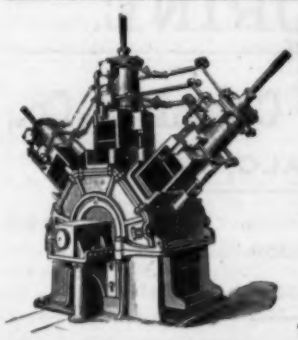

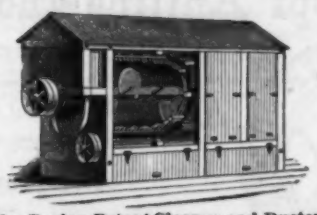

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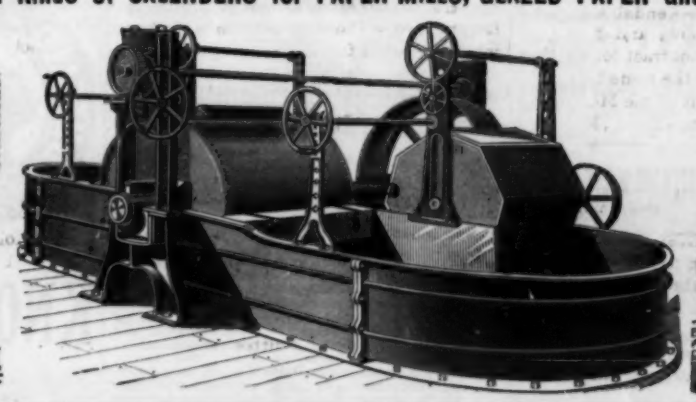

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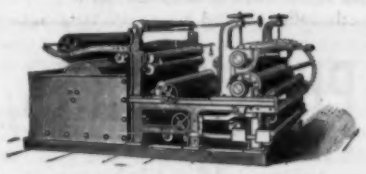

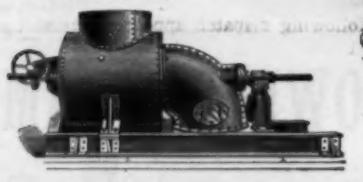

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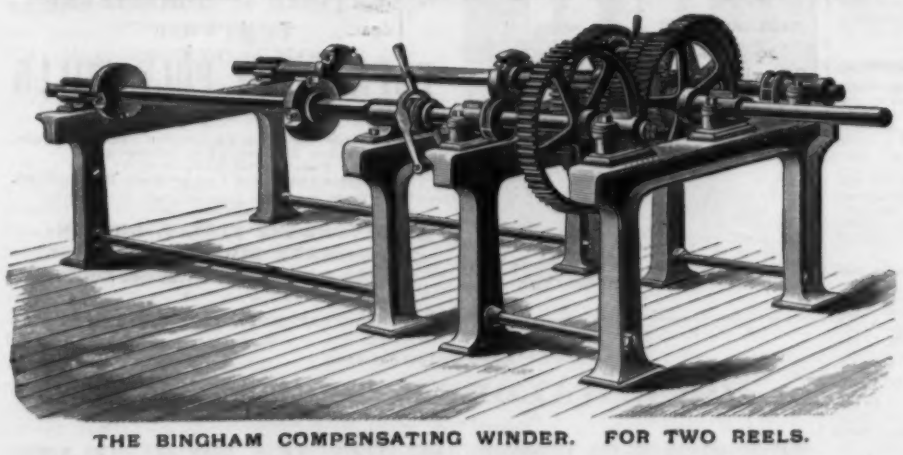

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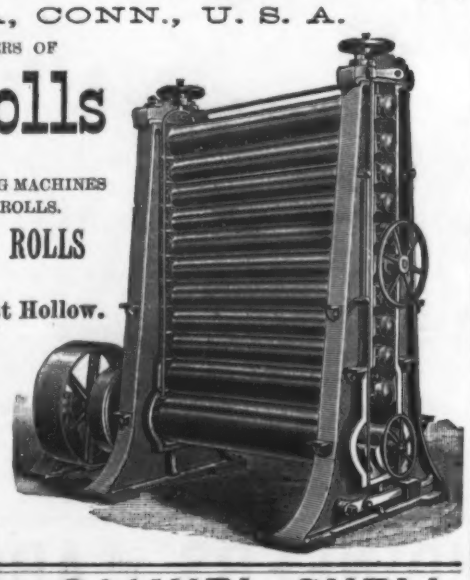

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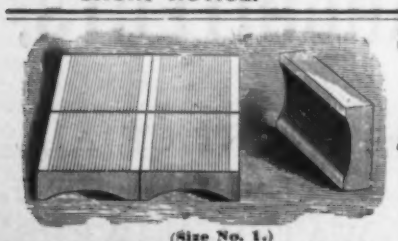

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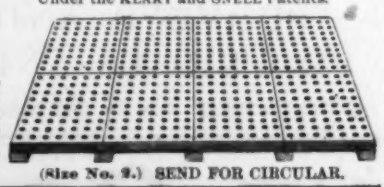

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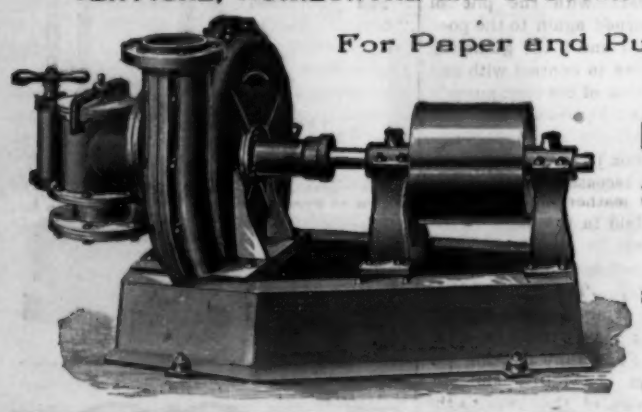

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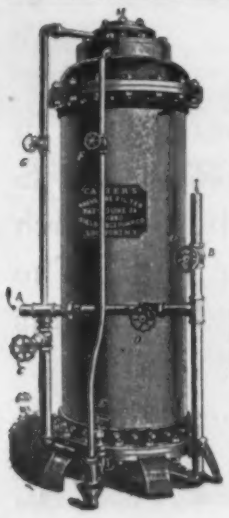

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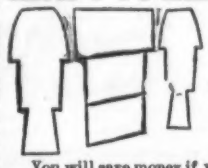

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PART II.

CHAPTER I.—**Cellulose.** Its chemical and physical properties, chemical relations and reactions.

CHAPTER II.—**Fibres.** Cellulose in its relations to the plant; the vegetable cell; the cell wall; changes which occur in the cell wall; lignin or incrusting matter; its chemical properties; characteristic markings of the cell wall in different fibres; characteristic cells other than fibres in different pulps. Classification of fibres: 1. Seed hairs; cotton, chemical and physical character of fibre, dimensions, analyses. 2. Bast fibres, as linen, jute, hemp, manilla, rhea, ramie, agave, sisal, adansonia, &c.; occurrence in plant, separation of filaments; character, size, distinguishing features of filaments and ultimate fibres, analyses and chemical properties. 3. Fibres and other cells from whole stems and leaves, as straw, esparto, bamboo; measurements and characteristics of fibres, yields, analyses; characteristic cells found with fibres. 4. Wood fibres: growth of wood; cambium layer; spring and autumn wood; sap and heart wood; resins; bark and knots; analyses of woods; specific gravities; ash; fuel values; occurrence and character of all woods used for pulp making.

CHAPTER III.—**Processes for Isolating Cellulose.** Rag boiling; special treatments for various fibres, as jute, straw, esparto; review of miscellaneous processes for treating wood; the water process, aqua regia, &c.; the soda process, history; preparation of liquors, boiling, washing, recovery, sources of loss; analyses of chemicals and liquors; the sulphite process, history; general principles; the different systems; liquor apparatus; preparation and analyses of liquors; digesters; linings; boiling; subsequent treatment of pulp; waste liquors; recovery. The sulphide and sulphate processes.

CHAPTER IV.—**Bleaching.** General principles; bleaching agents; bleaching powder; deterioration; analyses; preparation of bleach liquors; use in chests, engines, drainers; hot bleaching; acid bleaching; use of alum; chlorination and oxidation of fibre; washing stock, antichlors; loss in bleaching; ozone bleach; hydrogen peroxide; permanganate; sulphurous acid; special processes for various fibres.

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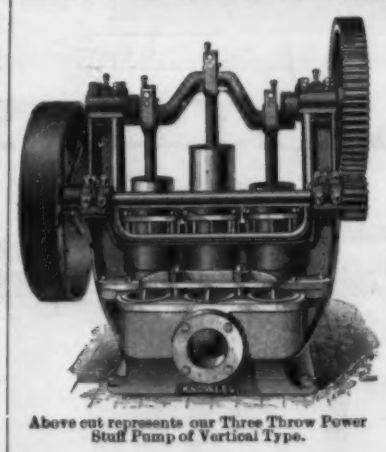

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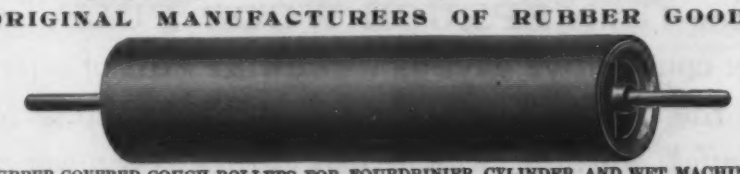

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recently underwent an operation for appendicitis. The operation, as is well known, is severe and dangerous, the patient's life being always in great peril; but Mr. Ustick survived it well, and is believed to be on the high road to recovery.

F. P. Tyler, secretary and treasurer of the American Paper Company, caught in the Wisconsin River the other day a 4 foot sturgeon.

This fine "Nahma" (vide "Hiawatha") was served up as the fish course at a dinner at the Hotel Hampden, this city, as "Boiled sturgeon à la Tyler, white wine sauce," and was greatly relished by the fortunate guests.

Mr. Tyler is again up among the Wisconsin waters—that paradise of all Western disciples of Izaak Walton—and says that he will soon ship a carload of sturgeon, bass, pickerel and speckled trout from Stevens Point.

Wm. M. and J. S. Van Nortwick, the well-known owners of several Wisconsin mills, were in Chicago last week attending court.

C. H. Davenport, of the Valley Paper Company, Holyoke, Mass., went about ten days ago to St. Paul (notwithstanding that the great, but stern and unromantic apostle for whom that city is named hath given it out that while "he who marrieth doeth well, he who marrieth not doeth better") and took unto himself a wife.

The happy pair passed through Chicago on their way East, and the best wishes of Mr. Davenport's many friends among the local paper trade went with them.

Geo. A. Hart, representing the Whiting Paper Company, Holyoke, was in town the other day. He says that all of the Whiting mills are running.

Among other visiting members of the trade during the past two weeks were: A. T. Heath, of H. G. Craig & Co., New York; Mr. Kimball, of the Ondawa Paper Company, Greenwich, N. Y.; C. H. Coye, of Dexter & Sons, Windsor Locks, Conn.; Mr. McWhirter, of the Linden Paper Company, Holyoke; C. D. Mead, president of the Mead Paper Company, Dayton, Ohio; E. S. D. Reynolds, of the Fox River Paper Company, Appleton; C. A. Babcock, of the Wisconsin River Pulp and Paper Company, Stevens Point, and last, but by no means least, W. Z. Stuart, of the Kimberly & Clarke Company, Neenah, one of the heroes of the battle with wind and wave, as narrated in another part of this letter.

Two negro porters in a Chicago paper warehouse were recently overheard discussing a sum in decimal money, which one had set for the other.

The pupil had often heard of "dollars and cents" of course, and could comprehend even "dimes" as a separate denomination, but he was badly mixed over "mills." "Why, don't you know," said his teacher, "dat 10 mills makes 1 cent?"

"No, dat ain't so now, Mr. Johnson," quoth the learner, "'kase I done heerd de boss say deh aint no ten mills in de country dat makes a cent!" R. B. D.

Splicing Rubber Belts.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

BY S. E. THOMPSON.

In paper and pulp mills where shutting down the machinery means not only delay and the loss of time of those employed, but also a poorer quality of product when starting up, the belting question is very serious, and one to which too often comparatively little attention is paid, both in the designing and in the running of the mill. The step splice for rubber belting is in many cases very serviceable. As yet rubber belting is the only thing which has proved itself suitable for general use in positions where there is a great deal of moisture, or where the belts are liable to a wetting from hose or other source, and in such positions the methods of fastening which are customarily adopted with leather belts cannot be used.

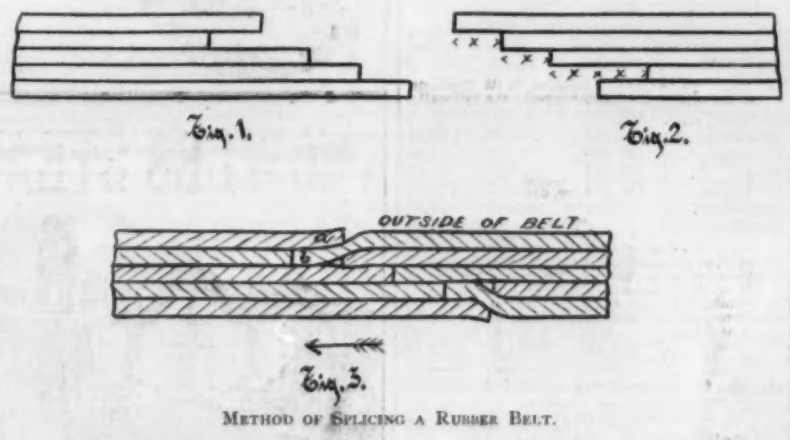
For narrow rubber, as for leather belts, a well made laced fastening makes a durable joint, provided the belt is in a position comparatively free from moisture; in a wet place, however, it is necessary to use metal in place of lace leather and undoubtedly belt hooks are the best for a butt joint. For wide belts, and in fact for all important belts in a mill running twenty-four hours a day, which cannot be thrown off and on by hand, or which control much machinery, a step splice should be used. In this case either the pulleys should be designed for a belt much wider or thicker than is given by customary rules for horse power, or else provision should be made for tightening the belt, the usual way being by means of an idler pulley. In many instances it is advisable to do both, that is, to use a wider or thicker belt than customary, and also to provide an easily adjustable and substantial idler—the latter in fact is almost always indispensable.

A great many mill men have the idea that a step splice in a rubber belt is a very difficult thing to make, and that it is necessary to send in every case to a belting manufacturer for a man or men to do the job. In point of fact, while it is an excellent plan to get an experienced man from the factory to make the first splice, an ordinary millwright or in fact a careful and intelligent man from among the hands in the mill can be easily taught to do the work. The tools necessary for making a step splice are a sharp knife with a thin blade, a large, blunt, bent awl about three-sixteenths of an inch in diameter, running to a point, and a pair of pliers specially made for the work, with long curved nippers having teeth to fit into each other and hold the plies firmly; also a belt punch or awl for making holes for rivets or lacing, and an ordinary carpenter's steel square.

One end of the belt may be prepared for splice by the makers, who will usually do this without extra charge, but it is best to state to them the length of steps required and the style of splice. If not prepared by the makers one end should be cut for splice before putting the belt around the pulleys, as this can be done most easily on a bench. The belt may then be run around the pulleys and the belt clamps put on, the right tension being found by judgment or else by means of spring balances.

In determining from which side to cut the splice two things must be considered; first, on which pulley the belt is liable to slip, and second, whether an idler is to be used. To avoid starting the plies the point of the splice on the inside of the belt should come first to the pulley; or, if the belt slips on the driven pulley, it should come last to the pulley. On the outside the point of the splice should come last to the idler. Both of these conditions may be fulfilled in practice by making the splice as shown in Figure 3. In places where slipping of the belt has not been determined by trial it may usually be assumed that the belt will slip on the smaller pulley on account of the smaller arc of contact, although if the smaller pulley is above the larger one the extra weight of the belt overhead will often cause it to slip on the lower pulley.

In cases where it is uncertain on which pulley the belt will slip, it is best to have the point of the splice strike the pulley last.



METHOD OF SPLICING A RUBBER BELT.

Figs 1 and 2 show the ends of the belt ready to put together, both ends being alike except that they are reversed. Fig. 3 shows the splice together. It is supposed in the sketches that the belt tends to slip on the driven pulley, and that there is an idler on the outside of the belt If the belt tends to slip on the driving pulley, the ends should be cut exactly the same; but the belt should be put around the pulleys in the opposite direction. The finished splice may then be shown in Fig. 3 by reversing the direction of the arrow and placing ply *b* over ply *a*, instead of under it.

In cutting the splice each ply should be carefully marked off with the square before cutting, a single ply cut with the point of a sharp knife, and this ply peeled off in convenient widths with the curved pliers, the canvas being first started up with the blunt awl. After cutting the portion of the outside ply which is to be run in under should be scraped off, and if the rubber is thick on the other plies it is well to scrape them also. Steps should be from 2½ to 4 inches in length. Three inches make a good length except in wide thin belts, where they should be longer. When ready, cover both surfaces with rubber cement by means of a stick or brush, allow them to stand until dry to the touch and then put together. It is a good plan next to put boards on each side of the belt and clamp them together, allowing it to stand thus for two or three hours before making holes for lacing or rivets. Next carefully square off and mark for the holes.

In places where there is no moisture and where the belt is not at all liable to slip the splice may be sewed with lace leather; but in most cases copper rivets will give the best results. Where lace leather is used holes should be made from 1½ to 2 inches apart each way; when riveting at least one row of rivets should be put into each step, and usually more than one; two rows should be put in the end step. Rivets in each row should be 2 or 2½ inches apart, and should be staggered in the following row, so that the holes will not directly follow each other. An awl is better than a punch for making holes, as it does not cut the canvas of the belt. A very common mistake is to put in too few rivets to a splice. An especially severe place should have more rivets than customary.

Some mill men prefer to make the splice one ply thicker than the remainder of the belt; this may be done without seriously affecting the even running of the belt; but it is not advisable to thicken the belt at the splice more than this, as the extra weight will cause flapping.

When the belt is to be taken up, cut the rivets with a pair of cut nippers, take them out, pull the plies apart with the pliers and recut, as desired. It is not necessary to cut out the whole of the splice, but it will be found convenient to cut out a length equal to the length of the step or a multiple of this length; that is, if the step is 3 inches long to cut out 3, 6, 9, 12 or 15 inches, as the case may be.

Envelope Machine.

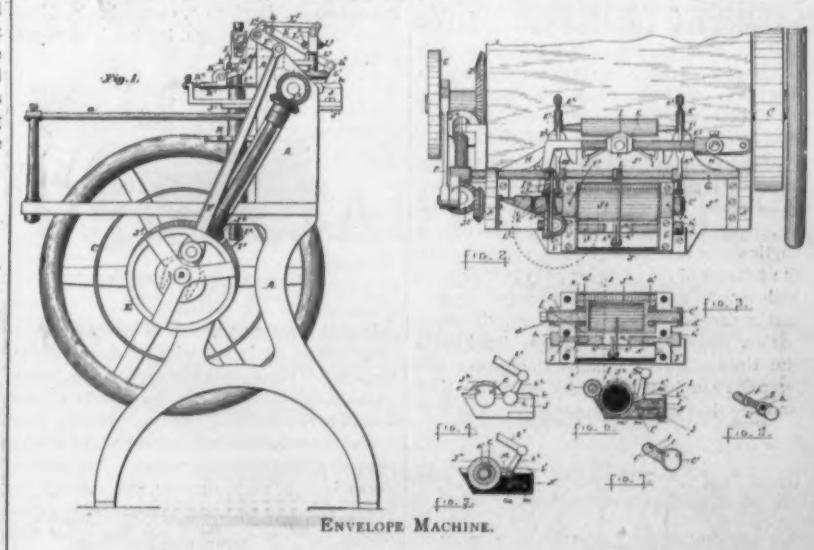
An improvement in envelope machines is herewith illustrated, Figure 1 being a side elevation of an envelope machine with those operating parts employed in the operation of folding the envelope omitted; Fig. 2 is a plan view of same; Fig. 3 is a plan view of the gum box shown partly in section; Fig. 4 is an end view of the same; Fig. 5 is a sectional view of the gum box on line XX, Fig. 3; Fig 6 is a sectional view of the same on line S. S., Fig. 3; Fig. 7 is a detached view of the sleeve inclosing the journals of the gum box roll and Fig. 8 is a detached view of one of the eccentric pins on which the "doctor" oscillates.

This invention relates to that portion of an envelope machine concerned in the operation of gumming, and it consists in an auxiliary gumming roll for gumming the "side flap," whereby gum of greater thickness than can be used with a sponge or other porous substance, such as is commonly used for that purpose, can be employed; and in devices for operating the auxiliary gumming roll so it can be used in connection with the main gum box; it also consists in certain improvements in the gum box which have for their objects, first, to securely pack the journals of the gum box roll, so as to more effectually prevent the escape of the gum; second, to secure a uniform flow of gum freed from grit or dirt over the gum box roll; third, to adjust the "doctor" so as to regulate the flow of gum, and fourth, to prevent the "coating over" of the gum by its continued exposure to the air.

A denotes the frame of the machine. B, the central driving shaft, to which power is applied by means of the belt pulley, C.

E is a cam on the shaft B, imparting through a connecting rod, F and arm F', an oscillating motion to the rock shaft G, journaled in bearngs at top of the frame. H is a table upon which the pile of "blanks" is placed. I is the "pick up," carried by the rod I', which is attached to the vertically reciprocating spindle I^2, which rests upon a lever, I^3, vibrated by a cam on the main shaft and not shown in the drawings.

J is the gum box held on the table J and containing the gum box roll J^3, having a continuous rotary motion imparted through the mitre gears J^3, gear J^4 and the gear J^5 on the main shaft B. A gumming roll, K, is journaled in bearings in the sleeves K' K^1, which are slid along the rods K^2 K^2 by links K^3 and arms K^4, which are attached to the rock shaft G, carrying the roll K back and forth from contact with the gum box roll J^3, as shown in Fig. 6, to the position shown in Figs. 1 and 2, passing beneath and in contact with the under surface of the "pick-up" I when at its highest elevation, as seen in Fig. 1. A side "pick-up," I^4, extends from the "pick-up" I in position to strike and gum the overlapping "side flap" of the envelope, and the side "pick-up" I^4 is gummed by the auxiliary gumming roll L attached to a spindle rotating in a sleeve, L', which is attached to a vertical spindle rotating in the bearing L^2, and having the beveled pinion L^3 meshing with the geared sector L^4, to which an oscillating motion is imparted through the connecting rod L^5 attached to an arm, L^6, on the rock shaft G, giving a vibratory motion to the gumming roll L, as indicated by the broken curved line L^7, Fig. 2, and carrying the roll L from its position, as shown in Figs, 1 and 2, to the position in contact with the gum box roll J^3, as shown by broken lines L^8 in Fig. 2. When the under surfaces of the "pick-ups" I and I^4 have been gummed by the contact of the gumming rolls K and L they are brought in contact with the upper blank of a pile of blanks held upon the table H, the "pick-up" I gumming the "back flap" and the "pick-up" I^4 the overlapping



ENVELOPE MACHINE.

"side flap." At the next upward motion of the "pick-ups" the adhesion of the upper blank causes it to be raised from the pile in suitable position to be taken and carried to the folding mechanism by a reciprocating carriage sliding on the bars *a*, Fig. 1.

While the "pick ups" have been carried downward in contact with the pile of "blanks," and returned again to the position shown in Figs. 1 and 2 the gumming rolls K and L are both in contact with and rotated by the friction of the continuously rotating gum box roll J^3, whose lower portion is immersed in the gum solution contained in the gum box J. The ends of the gum box roll J^3 are recessed and have annular disks *a' a'*, of leather or some semi-elastic material. Held in the sides of the gum box, and secured by the caps *b b'* are sleeves *c c'*, which inclose the journals *d d'* of the gum box roll J^3. The inner ends of the sleeves *c c'* are firmly pressed against the annular disks *a a'* by screws, *e e*, entering the caps *b b'*, thereby packing the journals of the gum box roll J^3 and preventing the admission of the gum to the bearings. Sleeve *c'* is closed at its outer end, and both sleeves have oil holes *f*, Fig. 7, connected by a channel *f'* in the outer surface of the sleeve directly beneath the oil holes f^2 in the caps *b b'*, Fig. 2.

In the sides of the gum box J and held from turning by the caps *b b'* are pins *g g'*, having the outer heads *h h'* with holes *i* to receive a pin or lever, to enable the pins *g g'* to be turned when desired. The portion of the pin *j j'* inside of the gum box is eccentric to the portion *g g'* and forms the bearings for an oscillating blade or "doctor," M, actuated by the "rock shaft" G through an arm, *k* and a connecting rod *k'* attached to an arm, k^2, on the blade M. The edge *l* of the blade M contiguous to the gum box roll J^3 is preferably made concentric with its axis of oscillation and may be carried toward or away from the gum box J^3 by the rotation of the eccentric bearings *j j'*, which are securely held in any desired position by the caps *b b'*, which inclose the portions *g g'* and form a gum tight joint, thereby regulating the flow of gum over the surface of the roll J^3. As the blade or "doctor" M is oscillated by the rock shaft G it will remain at rest and in the position shown in Fig. 6 during the period that the gumming rolls K and L are in contact with and taking gum from the gum box roll J^3; the edge *l* of the blade or "doctor" M then acting as a stationary "scraper," allowing a quantity of gum to follow the revolving surface of the roll J^3 around to the gumming rolls K and L, depending upon the distance between the edge *l* and the roll J^3. All coarser particles of dirt, grit, &c., being held back will accumulate in the angle *l'*, between the edge *l* and the gum box roll J^3.

Simultaneously with the motion of the gumming rolls K and L forward to gum the "pick-ups" the blade or "doctor" M is oscillated and brought into the position shown in Fig. 5; the curved surface at *l* moving past the surface of the roll J^3, and in the same direction with it, and carrying the accumulated dirt and grit past the blade M, allowing it to pass over the roll J^3 and become mixed again with the gum in the gum box J. The roll J^3 rotates in the direction of the arrow 1, Fig. 6, the side passing out of the gum slightly raising the adjacent gum by its adhesion. A plate N is supported on legs *m m* midway above the bottom of the gum box with a space at its front and rear edges between it and the roll J^3 and the front of the gum box. The gum raised by the rotation of the roll J^3 above the level of the gum in the box will flow out over the top of the plate N toward the front of the box J in the direction of the arrow 2 and, passing down between the edge of the plate N and the front of the box, return toward the roll J^3 beneath the plate N in the direction of the arrow 3; thus producing a constant current of gum around the plate N and preventing the "coating over" of the gum by its continued contact with the air. It is preferred to turn the edge *m'* of the plate N next the roll J^3 upward as increasing its efficiency in maintaining an active current of gum; but the essential feature of the invention consists in the use of a plate as described for the purpose of securing a movement of the gum in the gum box.

The construction and action of the blade or "doctor" M have been described as an oscillating blade whose edge *l* is concentric with its axis of oscillation; such a construction and operation are in many respects preferable, as an intermittent, oscillatory motion is easily imparted and made synchronous with the movement of the gumming rolls toward and away from the roll J^3 by means of their common connection with the rock shaft G. The position of the "doctor" blade M, relatively to the roll J^3, is also very conveniently adjusted by means of the eccentric pins forming the bearings of the blade; but it should be observed that the distinguishing features of the "doctor" blade consist: first, in its action as a "scraper" over the surface of the gum box roll while the gumming rolls are in contact with it; and second, the motion of its edge *l* in the same direction as the contiguous side of the gum box roll, when the gumming roll moves away from the gum box, allowing the dirt accumulated beneath the "doctor" blade to escape; and it will be readily seen that a vertical reciprocating motion of the "doctor" blade would accomplish the same purpose.

The essential feature of this part of the invention consists in the employment of a blade whose edge is alternately brought near the gum box roll in order to check the flow of gum during the period in which the gumming roll is in contact with and taking gum from the gum box roll, and removed during the period of non-contact of the gumming roll with the gum box roll, in order to allow any extraneous matter in the gum to pass the blade. The gumming of the side "pick up" I^4 is necessary in what are known as "high cut" envelopes and has long been in use, but such gumming has usually been accomplished by passing a box carrying a sponge or other porous material holding a solution of gum beneath the side "pick up," and bringing the saturated sponge in contact with the under side of the "pick up;" but the exposure of the gum to the air soon causes it to thicken and renders necessary the frequent cleansing of the sponge and renewal of the gum. Instead of this there is an auxiliary gumming roll, and it will be seen that an auxiliary gum box may be used placed directly in front of the side "pick up," or the main gum box may be lengthened and the auxiliary roll moved back and forth in a right line, similar to the gumming roll K, as described; but the construction shown and described accomplishes the gumming of both the back and side flap without enlarging the gum box or employing an additional box.

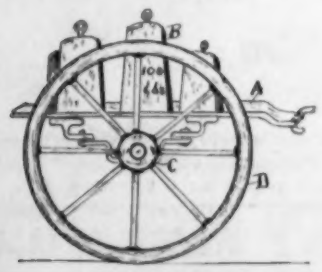
The British Board of Trade report for the month of May shows that imports into Great Britain fell $12,980,000 below those of May, 1893, the falling off being most marked in textile materials. Exports for the same period were $1,622,400 less than in the corresponding month of last year.

New Inventions—XLI.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

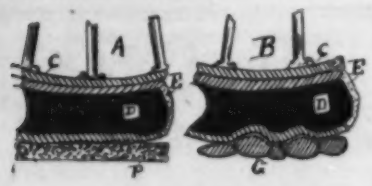
By Geo. Damon Rice.

The pneumatic rubber tire seems to be working well on the carriage wheels of England, where smooth, asphalt pavements are common; but the same kind of tire does not work so well in this country on account of the cobblestone pavements with which many streets are laid. Almost any kind of a wheel rides easily over a smooth street, but jostles over a rough one; therefore just where the pneumatic tires are most needed they are impracticable. The insurance system of the country would be a failure if it insured only fireproof buildings. If pneumatic tires are going to be adopted for carriage use a tire must be used which will run over cobbles as well as over smooth pavements. Some experiments with a newly invented paper tire, built something on the pneumatic principle, have proved that cobblestones are not disastrous to it. Furthermore, electricians and cycle makers are threatening to exhaust the supplies of india rubber and gutta percha, so that the advent of a substitute for these materials is particularly interesting. The promoters of the scheme of using paper pulp in making a hollow tube on the plan of the regular pneumatic tire for wheels have experimented with a specially built carriage fitted with the tires. This carriage they have run over the roughest of cobbles for a long time and the tires are still intact.



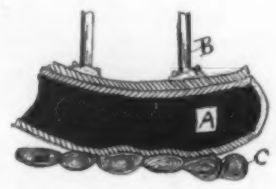
500 Pounds on Two Paper Tired Wheels.

Their experimental apparatus is a two-wheeled affair, as represented in the drawing. There is a platform, A, on the shaft of the wheels, and upon this are 500 pounds of weights. The wheels are made with the hub C and the tire D, about on the same plan as an ordinary wheel. A horse has been attached to the rig and driven over all kinds of roads. Cobble pavements have been run over particularly. This has been kept up for several months. For a time, rubber tires were used for the purpose of ascertaining how long they would last on rough, rocky roads and cobble pavements. So long as smooth pavements of the asphalt style were traveled over the rubber pneumatics worked well.



Rubber Pneumatics on Cobbles.

In the second cut views are given of sections of rubber pneumatic tires on carriage wheels. In A an interior view of the tire is shown, representing the effect upon it as it runs over a smooth pavement. The pavement is marked F. The wooden part of the wheel and spokes are designated by the letter C. The tire is illustrated by E, and an inside view of it by D. It can be seen that the tire simply flattens out a little at the bottom when it runs over the smooth pavement. No harm is done; the carriage runs without a jolt, and the tire will evidently last a long time; but as soon as the carriage strikes a cobbled street all changes, as shown in drawing B in the same cut. Here we have the wheel adjustments C, the tire E, and its interior D. The cobbles are marked G, and half an eye can see that every stone penetrates quite deeply into the rubber surface of the flexible tire. The carriage jolts more or less; but the worst falls upon the tire. The continual bending of the parts of the tire, caused by the stones sinking into it, soon ruins it. Now let us look at the tough, leather-like paper tire.



Paper Tire on Cobbles.

In this diagram a sectional view of a carriage wheel, equipped with a paper tire, is shown. B represents the spokes and other parts of the wheel, C are the cobble stones and A is the inside of the tire. Notice how slight the indentations in the tire are where contact is had with the stones. The stones press into it only slightly, yet enough to break the jolt so that the carriage rides easy. The same weight was put upon the paper tires as upon the rubber.

The paper tires are made hollow, filled with hair, varnished and polished. Paper pulp is used, but of course certain ingredients are compounded with it. The nature of these ingredients and the proportions in which they are used is what protects the invention, which is as yet unpatented.

Common wood pulp would fall apart, dissolve, break or prove worthless in some way were it not for the secret ingredients. The cost of the paper tires is less than half that of rubber. The weight is 20 per cent. less. Durability is indefinite.

Workmen's Insurance in Germany.

J. C. Monaghan, United States Consul at Chemnitz, gives the following inside view of the scheme of workmen's insurance in that country: All kinds of legislation looking to improving the condition of the workingman fill the statute books of the States and the German Empire. There are obligatory pension and insurance funds established to keep him from poverty and the poor house. The statistics of the imperial insurance office show that insurance legislation, if not all that it ought to be, or that its friends would wish, is nevertheless a great source of satisfaction to legislators whose highest aim is to give labor no good reason to complain of the Government.

During the past year, 278,777 persons were insured in the accident branch and 239,650 in the invalid and old age branch, *i. e.*, were participators in the benefits. Thus, within ten years after their establishment, these funds are furnishing means of decent existence to over 500,000 persons—1 per cent of the population—when incapacitated from work either by injury or old age. Of course, were these funds not in existence, many of those enumerated would get support from the communal poor funds, but it would not be given and received as a right, but as a charity, and while many could not be helped, each amount would have been the merest pittance. The great advantage of the state insurance is that it is given and received as a right—no shame being attached to its acceptance. The communes have gained, the burden once borne by them being now borne by the manufacturers.

This is best seen in the accident insurance statistics. Here the manufacturers paid all. In 1885—the first year in which trades unions participated in accident insurance—2,000,000 marks was the sum paid out, against 38,000,000 marks in 1893. Besides, the reserve funds, expenses of investigation, arbitration, maintenance of offices, payment of physicians, clerks, &c., must be considered. Since 1885, the circle of accident insurance has grown larger and larger. The sum paid out as compensation was 2,000,000 marks; in 1893, under almost similar conditions and circumstances, it was nearly double this amount. Manufacturers, alarmed at its increase, have begun to cry out. They claim that they cannot go on competing with other countries that have no such insurance.

Legislation looking toward an improvement of the laborer's condition is, however, as permanent as any on the statute books. These funds are far from satisfactory, but they have come to stay until something better takes their place.

The Sulphur Trade of Sicily.

The following table exhibiting the quantity of sulphur exported during the last three years, by the British Consul at Palermo, shows the exportation of this article is always on the increase, notwithstanding the fact that the constant excess in the output has a depreciatory effect on the value. Much attention has been devoted to this subject by the Italian and Sicilian press and by Parliamentary Deputies, and many remedies have been proposed, but so for as I know none of them have been yet adopted:

Country.	1891.	1892.	1893.
United States.	1,267,122	1,113,719	1,100,599
Great Britain and colonies.	319,629	336,426	333,999
France and colonies....	728,476	948,836	1,164,791
Germany.....	134,188	193,581	186,084
Belgium.....	64,709	79,152	68,802
Holland.....	25,258	28,082	41,104
Spain.....	38,824	64,616	54,703
Portugal.....	155,212	203,018	189,052
Denmark....	827	9,297	24,874
Sweden and Norway...	31,770	33,625	64,187
Russia.....	164,409	187,696	270,032
Greece.....	164,847	147,958	142,670
Turkey.....	27,038	40,787	45,560
Austria.....	133,523	132,055	132,239
S. America..	2,188	700	315
Italy.....	551,455	504,236	722,032
Total cantars.....	3,809,526	4,042,784	4,534,443

The shipments were from the following ports and in these quantities:

Port of Shipment.	1891.	1892.	1893.
Port Empedocle (Girgenti).....	1,742,716	1,700,433	1,990,347
Licata.....	801,197	799,702	936,186
Catania.....	1,264,323	1,542,649	1,607,910
Palermo.....	1,300	.....	.....
Total cantars.....	3,809,536	4,042,784	4,534,443

Note.—13 cantars = 1 ton.

Wood Pulp, Soda AND Sulphite,
IMPORTED BY
G. RAU, TIMES BUILDING, New York.
SOLE AGENT FOR THE U. S. AND CANADA:
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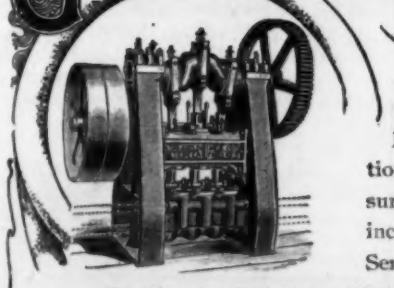
SOS

COMPARATIVE PRODUCTION
For ONE DAY:
May 1st, 1892, ... 1,199,000
May 1st, 1894, ... 2,591,000

GOULDS PUMPS Are Better

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SMITH & WINCHESTER CO., 19 to 27 Wendell St., Boston, Mass. WOODIS & LITTLE, 312 & 314 Market St., San Francisco, Cal.
S. O NELSON MFG. CO., Eighth & St. Charles Streets, St. Louis, Mo. L. H. BATES, 221 Vine Street, Philadelphia, Pa.

For Mining and Concentrating Works, Coal, Stone and Ore Screens, Gas and Water Works, Clay and Sand Screens, &c.

For Paper, Woolen, Oil and Flour Mills, Filters, Dryers, Strainers, Ventilators, &c.
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MAIN OFFICE AND WORKS: 224 and 226 North Union St., CHICAGO, ILL.
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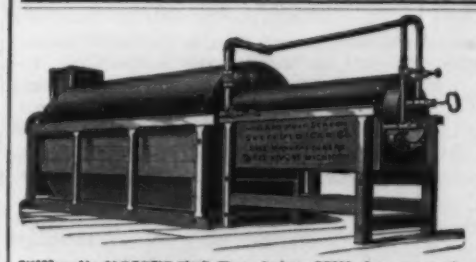
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No wearing parts to give out.
Works automatically.
Delivers slivers clear of screen without attention.
Less help required in running.
Screen plates warranted for three years without recutting.
Requires only ⅓ Horse Power to operate.
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Imports and Exports.

IMPORTS AT NEW YORK.

FOR THE WEEK ENDED JUNE 22, 1894.

An. Colors..	927	$58,046	Paper.....	989	$34,151
Alum.....	—	—	Steel Pens...	5	7,088
Alum's Cake	—	—	Stationery...	14	610
Bl. Powders	264	4,235	Slate Pencils	5	40
Soda Ash...	3,558	12,910	Clay.....	—	164
Soda, Caus.	630	8,220	J'te B'ts, &c.	—	—
Soda, Sal....	—	—	P. Hangings	4	382
Soda, Hypo.	—	—	P'p'r Stock..	4,176	30,087
Ultramarine	5	165	Terra Alba..	—	—
Books.....	235	23,688	Waste.....	12	171
Newspapers.	152	5,033	Wood Pulp..	6	298
Engravings.	90	11,491			
Ink.....	425	1,145			
Lead Pencils	1	79	Totals....	11,488	198,003

Imports General Merchandise for the week ended June 22, 1894.....$5,386,05

IMPORTS OF PAPER STOCK AT NEW YORK.

FROM JANUARY 1 TO JUNE 27, 1894.

Whence Imported.	Rags.	Old Papers.	Chemical Fibre.	Ground Wood.	Manilla Stock.
	Bales.	Bales.	Tons.	Tons.	Bales.
Alexandria....	1,249	....	....	....	....
Antwerp.....	206	250	678	....	8,066
Aspinwall	90	....	....	....	....
Bordeaux.....	548	....	....	....	....
Bremen	672	25	6	....	5,419
Bristol.....	....	....	....	....	2,871
Buenos Ayres.	123	....	...	....	....
Calcutta.....	....	....	....	....	2,797
Cent. America	60	....	....	....	....
Christiania....	....	....	390	....	474
Copenhagen..	393	....	1,100	....	1,309
Dublin.....	....	186	....	....	....
Dundee.....	....	....	....	....	658
Dunedin.....	....	....	....	....	183
Fiume.....	....	....	99	....	....
Geestemunde.	252	....	....	....	1,309
Genoa.....	....	....	....	....	3,256
Glasgow.....	327	77	....	....	187
Gothenburg ..	....	....	92	....	....
Hamburg.....	1,238	220	478	....	3,065
Hamilton.....	....	....	....	....	42
Hiogo.....	9,001	....	....	....	....
Hong Kong...	43	....	....	....	....
Hull.....a	2,320	185	922	....	10,505
Kobe.....	27,225	....	....	....	....
Leghorn.....	1,084	....	....	....	....
Leith.....	....	150	....	....	138
Liverpool.....	435	840	....	....	12,909
London.....	3,314	1,357	20	....	7,643
Marseilles	86	....	....	....	473
Nassau	48	....	....	....	....
Newcastle	....	73	....	....	3,081
Rio.....	26	....	....	....	....
Rotterdam....	640	29	517	....	6,615
Southampton.	....	....	....	....	100
Stettin.....	2,372	....	500	....	6,350
Trieste.....	....	....	40	....	....

a. Including 347 bales cotton waste.

NEW YORK IMPORTS.

FROM JUNE 20 TO JUNE 27, 1894.

Paper Stock.

E. Hatton & Co., Margarethe, Bremen, 640 bs. bagging.
Lewy Brothers, by same, 90 bs. bagging.
F. Salomon & Co., by same, 640 bs. bagging, 140 bs. rags, 95 bs. papers.
Oelrichs & Co., Wittekind, Bremen. 23 bs. manillas.
Burgass & Co., Manitoba, Buenos Ayres, 97 bs. rags
F. Bertuch & Co., Hekla, Copenhagen, 954 tons chemical fibre.
J. W. Mason & Co., by same, 177 bs. manillas.
J. Libmann, State of Nebraska, Glasgow, 39 bs. rags.
W. A. Avis & Co., Auguste, Hiogo, 800 bs. rags.
Train, Smith & Co., Hindoo, Hull, 348 bs. bagging.
Jessup & Moore Paper Company, by same, 34 bs. rags.
Lewy Brothers, by same, 157 bs. rags, 198 bs. bagging.
Burgass & Co., by same, 252 bs. bagging.
James Pirnie, by same, 96 bs. bagging.
L. A. Solomon & Brother, by same, 56 bs. rags.
Castle & Gottheil, Italia, Leghorn, 164 bs. rags.
J. Libmann & Brother, Normandie, Liverpool, 16 bs. rags.
J. W. Mason & Co., by same, 267 bs. manillas.
G. Rau, The Queen, London, 92 bs. rags.
Lewy Brothers, by same, 120 bs. rags.
Lewy Brothers, Mobile, London, 65 bs. rags.
J. W. Mason & Co., Marengo, Newcastle, 100 bs. manillas.
Train, Smith & Co., by same, 245 bs. bagging.
Horace Dutton & Co., by same, 306 bs. bagging.
Train, Smith & Co., Rotterdam, Rotterdam, 77 bs. bagging, 116 bs. rags.
James Pirnie, Veendam, Rotterdam, 262 bs. bagging.

Paper.

B. Lawrence Stationery Company, Teutonic, Liverpool, 2 cs.
Nevius & Haviland, by same, 2 cs. hangings.
Lawrie & Buchanan, Taurie, Liverpool, 2 cs.
Dingelstedt & Co., by same, 4 cs.
Thorn & Walter, by same, 4 cs. hangings.
W. Heuermann, Wittekind, Bremen, 10 cs.
Eckmeyer & Co., by same, 8 cs.
G. Gennert, by same, 1 cs.
Rudolf Sulzberger, by same, 2 cs.
Gane Brothers, Rotterdam, Rotterdam, 9 cs.
H. S. Leclercq & Co., by same, 6 cs.
E. & H. T. Anthony & Co., by same, 14 cs.
Kupfer Brothers, by same, 10 cs.
J. Dickinson & Co., Lucania, Liverpool, 5 cs.
R. C. Thebault, City of Rome, Glasgow, 15 cs. hangings.
E. Fougera & Co., La Bourgogne, Havre, 25 cs.
American Tobacco Company, by same, 12 cs.
J. C. Druckleib & Co., by same 29 cs.
Leizer Wolff, by same, 2 cs.
W. H. S. Lloyd, by same, 1 cs. hangings.
F. Beck & Co., by same, 1 cs. hangings.
Geo. J. Kraft, by same, 1 cs.
W. McHugh, by same, 1 cs. hangings.
W. Baumgarten, by same, 1 cs. hangings.

BOSTON IMPORTS.

FROM JUNE 21 TO JUNE 27, 1894, INCLUSIVE.

Paper, &c.

Peter Wright & Co., Hungarian, Hamburg, 21 cs. papers.
A. P. Schmidt & Co., by same, 8 cs. printed music.
G. Borgfeldt & Co., by same, 3 cs. albums.
J. G. Bowden & Co., British Empire, London, 10 cs. tissue paper.
E. A Snow, Cephalonia, Liverpool, 3 cs. photographs.
Wm. Guild & Co., by same, 5 bs. periodicals.
Wadsworth, Howland & Co., by same, 4 cs. drawing paper.
Dennison Manufacturing Company, by same, 9 pkgs. tissue paper.

Paper Stock.

Train, Smith & Co., Norse King, Antwerp, 142 bs. manillas, 247 flax waste.
J. B. Moors & Co., by same, 274 bs. flax waste.
Wheelwright Paper Company, Carlisle City. London, 250 bs. waste paper.
C. A. Cheney, Cambroman, Liverpool, 5 bs. cotton waste.
R. H. Overton & Son, by same, 73 bs. manillas.
True & McClelland, Michigan, Liverpool, 25 bs. new rags, 53 bs. waste paper.
True & McClelland, Ottoman, Liverpool, 40 bs. rags.
R. H. Overton & Son, by same, 221 bs. manillas.
J. B. Moors & Co., British Empire, London, 83 bs. rags.

Sizing.

C. A. Cheney, Cambroman, Liverpool, 203 bags.
Thomas Groom & Co., by same, 75 bags.
Baeder, Adamson & Co., by same, 54 bags.
J. W. McClintock, Cephalonia, Liverpool, 75 bags.

Bleaching Powder.

J. L. & D. S. Riker, Ottoman, Liverpool, 270 cks.
J. L. & D. S. Riker, Michigan, Liverpool, 182 cks.
J. L. & D. S. Riker, Cambroman, Liverpool, 180 cks.
J. L & D. S. Riker, Columbian, Liverpool, 230 cks.
A. Klipstein, by same, 19 cks.
Order, by same, 12 cks.
A. Klipstein, Norse King, Antwerp, 147 cks.
Mason, Chapin & Co., by same 56 cks.
Fuerst Brothers, Cephalonia, Liverpool, 19 cks.

Caustic Soda.

Edward Hill's Sons & Co, Ottoman, Liverpool, 175 drums.
Edward Hill's Sons & Co., Cambroman, Liverpool, 375 drums.
James Lee & Co., by same, 50 drums.

Soda Ash.

Warren & Co., Michigan, Liverpool, 36 cks.
Warren & Co., Cambroman, Liverpool, 190 bags.
Wing & Evans, Cephalonia, Liverpool, 63 cks.
Wing & Evans, Columbian, Liverpool, 63 cks.
J. L. & D. S. Riker, by same, 14 cks.
Order, by same, 55 cks.

Soda Crystals.

Warren & Co., Michigan, Liverpool, 140 bbls.

Crude Sulphur.

Linder & Meyer, Columbian, Liverpool, 1,336 bags.

PHILADELPHIA IMPORTS.

FOR THE WEEK ENDED JUNE 23, 1894.

Paper Stock.

Order, Illinois, Antwerp, 155 bs. cotton tares.

Soda Ash.

Brown Brothers & Co., Indiana, Liverpool, 105 cks.

Antichlor.

Order, Illinois, Antwerp, 50 bbls.

EXPORTS of Paper, &c., from New York for the Week Ended June 26, 1894.

BOOKS, cases, to British West Indies, 5; Mexico, 1; Colombia, 1; Chili, 4; Liverpool, 2; Trebizond, 3; Venezuela, 7; China, 8; Dutch West Indies, 6; Havre, 2; Hull, 3; London, 26; New Zealand, 3; Newfoundland, 14; Nova Scotia, 3; Peru, 1; Rotterdam, 1.

PAPER, to Cuba, 209 pkgs.; British West Indies, 362 pkgs.; Venezuela, 1 cs.; London, 199 cs.; Liverpool, 117 cs.; British Australasia, 79 pkgs.; Central America, 43 pkgs.; Chili, 1 cs.; Hamburg, 3 cs.; Mexico, 61 pkgs.; Newfoundland, 178 pkgs.; Argentine Republic, 38 cs.; Azores, 1 cs.; Brazil, 255 pkgs.; Bremen, 2 cs.; Christiania, 3 cs.; Hull, 31 cs.; Genoa, 5 cs.; Hayti, 2 cs.; Mulheim, 65 cs.; New Zealand, 181 pkgs.

WALL PAPER, cases, to Brazil, 2; Uruguay, 10.

STATIONERY, cases, to London, 18; Liverpool, 5; British West Indies, 6; Central America, 3; Ecuador, 6; Hamburg, 1; Mexico, 4; Gothenburg, 3; Hayti, 2; Newfoundland, 38; Nova Scotia, 1; Argentine Republic, 3; Brazil, 23; Chili, 1; Cuba, 3; Berlin, 1; Copenhagen, 4; Colombia, 9; Christiania, 1; Dutch West Indies, 2; New Zealand, 1; Peru, 1; Venezuela, 12.

CARDBOARD, packages, to Venezuela, 2.

AGGREGATES AND VALUES.

Paper, reams.....	—	—
Paper, pkgs.....	1,134	$5,156
Paper, cases.....	510	9,723
Books, cases.....	90	7,396
Stationery, cases.....	150	8,145
Rosin, bbls.....	5,673	14,247
Totals.....	7,557	$44,867

Exports General Merchandise for the week ended June 26, 1894..... $6,398,129

Apparatus for Electric Welding.

Letters patent for an apparatus for electric welding embodying several new and novel features have been issued to Rudolph M. Hunter, and been assigned to the Johnson Company of Johnstown, Pa. The particular construction employed as an example of the use of the apparatus is that in which it is used for the manufacture of steel rails wherein the feet or chairs are welded to the webs of the girder rail, so as to give it additional height and a self-supporting base. This rail construction is well known and has been manufactured by other methods of welding the two parts together. In the processes heretofore used for electrically welding the feet to the web of a girder rail, there was employed apparatus in which the two parts were firmly gripped in suitable jaws, the parts pressed together, and an alternating current of great volume caused to pass through the parts in contact, so as to cause the metal to fuse and weld together.

In carrying out the present invention the two parts of the metal to be welded are brought in firm contact and submerged in a liquid, preferably acidulated water. While so immersed a continuous electric current from an electrode in contact with the liquid is passed through the metal parts to be united and back to the source of electrical energy, the liquid being employed as a conductor for the current. In practice the positive current is delivered to the electrode submerged in the liquid and the negative current is delivered to the parts of the metal to be welded. The action of the current causes the decomposition of the liquid, generating gases adjacent to the metal parts in contact to be welded, and this produces such reactions that the portions of the metal in contact with the liquid are instantly brought to a welding heat. In this method of welding a considerably more intense current or one of greater tension is required than in the alternating system before referred to, and the current is preferably continuous in its nature, or what is known as a continuous current as distinguished from an alternating current. It might be a pulsating or intermittent current if desired. When the two parts of the metal in contact are fused or brought to a welding heat they instantly unite, forming an integral structure; and this joint may be further strengthened by having the parts which are welded subjected to pressure performed by hydraulic, gravity or steam devices.

In this particular device a traveling support or carriage is provided for the girder rail and suitable clamps carried by the carriage for the feet, whereby the latter may be adjusted in position with respect to the rail while it is held on the carriage. At one place adjacent to the rails or bed upon which the carriage moves the joint between the foot portions and the girder rail is surrounded by a suitable hollow frame, through which a liquid is caused to flow to submerge the parts in contact during the electric welding operation. After the welding has been performed the liquid is lowered, the hollow frame is separated, and the rail with its welded foot is moved along to be brought under a hammer or compression device. Simultaneously with the foregoing operation a second foot, previously clamped in position upon the rail, is brought into position so as to be held in the hollow frame and subjected in its turn to the welding operation. By this means the welding and forging or compression operations may be carried on simultaneously but successively with respect to a single part operated on.—*Iron Age.*

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WM. J. CORBETT & CO.,
WHOLESALE DEALERS IN AND PACKERS OF
Woolen Rags and Paper Makers' Supplies,
86, 88 & 90 COVE ST., BOSTON, MASS.
WOOLEN RAGS GRADED IN COLORS AND QUALITY.
OUR SPECIALTIES: "EXCELSIOR" AND "STAR" PACKINGS.

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TRADE MARK. ENGLISH FELTINGS.
ALSO IMPORTERS AND DEALERS IN
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TRUE & McCLELLAND,
(LATE E. A. TRUE & CO.
PACKERS AND IMPORTERS OF
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SIGMUND GOLDMAN, Agent for the United States and Canada,
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The McCORMICK Turbine gives more power per diameter with a higher percentage of useful effect from the water used than any other water wheel heretofore made. All sizes, both right and left hand, tested in the Holyoke testing flume.
The SUCCESS Turbine, long and favorably known in the paper trade as a first-class water wheel, possesses valuable features found in no other turbine, and gives a high percentage of useful effect from the water used.
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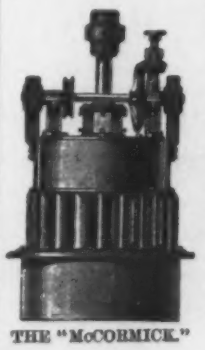
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THE "SUCCESS."

The Paper Trade Journal.

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NEW YORK: SATURDAY, JUNE 30, 1894.

"THE CHEMISTRY OF PAPER MAKING."

OFFICE OF STATE ASSAYER,
Boston, June 29, 1894.

Messrs. Howard Lockwood & Co., 126 Duane Street, New York, N. Y.:

DEAR SIRS—I beg to inform you that I have to-day completed chapter ten of "The Chemistry of Paper Making," and this, together with the appendix, will go to the printer to-morrow morning. All the matter now in type is indexed, but I cannot of course complete the index until I receive proofs in pages of this last lot of copy, and I shall also want to add one or two tables to the appendix. This will be ready as soon as the first proof is received.

With regard to the appendix I must ask you to bear in mind that it consists almost entirely of tabulated figures and that it will be impossible to read proof quickly. Yours very truly,

A. D. LITTLE.

Chapter ten is in the hands of the printer! It completes the body of the book; the appendix and index are yet to be compiled; and the remaining proofs are to be read; after which there will be no delay. The work should be on the market within a few weeks, and we are sure it will merit the appreciation of the trade. In fact, we have now several hundred orders for the book, which will be filled in rotation as received. The price is $5, postpaid.

HOWARD LOCKWOOD & CO.
JUNE 30, 1894.

THE state of trade, and the measures best adapted to its improvement, could be made an interesting subject of conference and discussion at the annual meeting on July 25. Western manufacturers should meet their Eastern brethren on that occasion.

THE murder of the President of the French Republic shows that anarchists and socialists, to whose teachings it was due, are incapable of appreciating liberal government. They are friends not of liberty but of unbridled license, and the assassin's knife under such conditions offers the strongest argument that can be advanced for autocratic government. We deplore the act which has deprived France of her chief magistrate, and sympathize heartily with a people and family bereft of an exalted character.

A COMMUNICATION in another column refers to the article on "The Making of News," which appeared last week in THE PAPER TRADE JOURNAL, and while it starts out to make issue with the writer of the article referred to, and who concludes his comment this week, it admits the situation. Conditions between the manufacturers and consumers have steadily gone on from bad to worse, and while the latter are grasping to the last degree, the former must charge these conditions to their own subserviency and weakness. None of the exactions now made on the paper makers could hold if the trade were to assert their rights and were unwilling to "compete for business on any terms."

THE Canadian postal authorities have issued a circular letter to the publishers of that country, which contains a ruling to the effect that the inclosure of circulars soliciting subscriptions and printed envelopes in newspapers will no longer be permitted. The only inclosures allowed are bona fide supplements and accounts and receipts sent to subscribers. A supplement will be bona fide only when it contains crowded out matter; no tricks of naming and dating extra sheets to correspond with the paper will "go." Why soliciting circulars should be excluded is not plain, unless the Canadian postal revenue needs a little addition. A contemporary seems to think that the new order is the outcome of an abuse of privileges by publishers of political newspapers in sending campaign literature folded in with their journals—a method not unknown on this side of the border.

THERE is a bill now before Congress which, if passed, will relegate the "ticket scalper" to the limbo of forgotten personalities. Under its provisions a man having once bought a railway ticket cannot sell it again should he happen not to use it, but must remain its happy owner forever, unless the railway company relieves him of it at a handsome discount. The ticket scalper has in fact flourished on the peculiar methods of the railways rather than on any dishonest intention of ticket buyers. It very often happens that a person finds that the company will sell him a through ticket for a trifle more than is asked for one to an intermediate point to which he wishes to go. Very sensibly he buys the through ticket, and at the end of his journey sells the unused portion to the scalper, who in turn can easily find someone who wants to make the remainder of the trip which has been paid for. The local rate between the intermediate point and the end of the through trip is usually enough higher to give all hands a little profit. We are reminded by this of some peculiar methods of freight handling by the railways before the advent of the Interstate Commerce law, by which it was often cheaper to ship freight through to the end of the route, and then back to its objective point, some intermediate station, than to bill it to the station direct. It does not seem probable that any law can be enacted or put into execution which will prevent a man from disposing of an article which he has lawfully bought and fully paid for, whether it is a railway ticket or anything else. Besides, the "ticket scalper" can consistently pose as "the people's friend."

A NEW banking plan, of which the following are the principal features, has been brought forward by a representative from Connecticut: The plan provides for a retention of the main features of the present National bank act, including its methods of administration. Every bank, however, organized under it will be designated as "interstate," to distinguish it from State and National banks. As security for circulation a bank may deposit with the Treasurer of the United States any interest bearing bonds issued under due authority by the United States or any State of the Union, or by any county or municipal corporation within any State, the comptroller of the currency to pass upon the character of the bonds. The circulating notes will not be guaranteed by the United States, but the Treasurer will hold the bonds as collateral security, and may sell them for what they will bring if the bank goes into liquidation. Besides this, the notes will constitute a first and permanent lien on the assets of the bank, and must be redeemed in legal tender United States coin upon presentation, the banks being required to keep a reserve of 25 per cent. of deposits in lawful money of the country. A central redemption agency is to be established in the office of the comptroller of the currency, and banks will be required to keep there 5 per cent. of their outstanding circulation for the redemption of notes which drift too far away to be redeemed over the bank's own counters. This redemption fund is to be kept in coin. These are the essential provisions for the protection of note holders. No distinction is to be made in the money of redemption between legal tender gold and silver, but a provision is made for the establishment of gold banks, which must deposit bonds, the principal and interest of which are payable in gold, the notes to be redeemable exclusively in that metal. Provision is made for bringing all existing banks under the new system. Whether this is the same as a banking bill purporting to be fathered by Representative Walker, of Massachusetts, is not quite clear. Of the latter the chief features are reported to be an elimination of all State banks, a gold and silver basis instead of bonds, and doing away with the various forms of currency now in use and bringing about uniformity in the money of the country, all money to be issued by the Government through the banks.

THE conference of representative business men of both the North and South, called together by Senator Walsh, of Georgia, to devise means for developing the resources of the South, met at the Fifth Avenue Hotel in this city, on the 21st inst. This meeting, following closely after the Southern Immigration and Industrial Congress recently held at Augusta, Ga., indicates a lively awakening among Southern business men to the necessity of personal energy if their section is to keep pace with the remainder of the country. The South has two problems to solve; lack of skilled labor and the more pressing one just now—insufficient capital. There can be no doubt that the real resources of the South have as yet hardly been touched. The three great staples, cotton, sugar and rice, have led Southern energy into ruts out of which it seems to be hard to climb. Her people are learning, however, that true prosperity and progress are the products of diversified industries, and the notable meetings mentioned above indicate that the Southern mind has laid hold of this idea resolutely. The labor problem is difficult to solve on account of its race features. This can be settled only by Southerners putting themselves in line with the better sentiment of the world. Foreign immigrants would, however, see fewer difficulties in the way of permanently settling in the South than would our Northern mechanics. For some years to come, at any rate, white labor in the South, skilled or otherwise, will be obliged to compete with that of the blacks and to live on the same social plane. Wrong as this is, it is a fact. Regarding capital, the experiences of the past year have shown that a good industrial beginning has been made on a basis of method and principle which seems sound. With the remainder of the country the South has suffered much from business depression; but perhaps less in degree than other sections of the Union. In the ten years between 1880 and 1890 the value of her agricultural and manufactured products increased $800,000,000, and there is no doubt that since 1890 her progress has, barring the troubles of the past year, been even greater. The very best results may be hoped from the discussion at the recent conference. The South needs Northern capital, and the better understanding which such conferences bring about will be helpful to both sides. Most of the New York men who took part in it are already largely interested in Southern schemes. The field is undoubtedly promising for investors if they can be assured of protection to their interests. Some financial vagaries peculiar to the regions may have to be abandoned, however, before the general investor from the North will feel secure. An enormous amount of unemployed capital is stowed away in New York banks, and as long as it remains there the cry of the unemployed will be heard in the land. Its active use would soon change the aspect of business in every part of the country.

Watermarks.

BY DANDY.

Next Wednesday is the ever Glorious Fourth, and it is to be presumed that all patriotic paper makers will celebrate it in becoming style. It is to be hoped that none of them will burn their fingers or meet with any other accidents.

A member of the New York trade began the celebration early. He is living at the seashore, and took home with him a few nights ago a quantity of those matches which cannot be blown out. As he was driving from the railroad station a runaway smashed into his conveyance and threw him out. The fusees fell under him and ignited, and between the sudden stop when he reached the earth and the burning matches he had a hard time.

For the present he takes life easy and walks with a cane.

A Duane street man went into a Broadway café a few days ago to "fight two fingers," and said to the white aproned attendant: "A little whiskey, please." The article was put out, and the imbiber then asked, "Whose is this?" Whereupon the barkeeper said, "That's ——'s whiskey," the imbiber's name being inserted in the blank. The laugh of those in hearing was very hearty, and the Duane street man's friends now doubt his story that he had never been in that particular café before.

The strawboard men who have periodical fits of harmony and fighting have come together again, as the outcome of several meetings in the West. The result is seen in the advance in the price of strawboards, and it now remains to be seen how long it will be before the boys are "slashing" again. Meantime they 're happy.

One hears of very low prices on colored tissues nowadays. As one manufacturer said when he heard of a transaction at a ridiculously low figure: "Why, it costs that mill 10 cents a ream more than that to make that paper, but I suppose the note was met." Presumably it was; but you know that kind of figuring brings only one result—a creditors' meeting, provided of course there is enough left to hold a meeting about.

"Necessity is the mother of invention" is a trite old saying, but it is gospel truth nevertheless, as has been proved by the coal miners' strike. The bad fix in which various classes of business became involved through the strike has given a wonderful impetus to efforts directed toward the utilization of oil for fuel. This is being experimented with on ocean steamers; the Government will employ it as soon as a safe and efficient plan is offered for its introduction into its steamships; it is successfully in use for firing pottery and glass making, and in many directions inventors are busy working out devices for its employment. In Russia locomotives are run with oil fuel, and it is said to do its work even better than coal, and of course does away with the ashes and dirt incident to the use of soft coal.

Trade Talks.

Col. G. W. Thompson, Diamond Mills Paper Company, New York—We shall probably shut down our Whippany Mill at the end of the month, and whether we will start it up again or not depends entirely on what kind of a tariff Congress gives us. We make letter copying papers and other fine tissues at that mill, and have demonstrated our ability to make papers equal in every respect to the foreign papers. This we can continue to do if we have a proper tariff. Those who have the matter in charge promised that we should have such a tariff; but up to date they have failed to give it. They have cut the tariff on these papers in half, and that simply means that manufacturers of these goods here will have to stop, for the foreign manufacturer can make them cheaper, owing to the fact that he pays less for his help. We are to-day paying help twice as much as the English makers and more than twice as much as the German makers. If the tariff as now proposed becomes a law we will shut the mill down altogether. If we should by any means continue to operate it under the proposed new tariff, we should have to reduce wages, and that we do not propose to do unless we should be absolutely driven to it. If the proposed tariff goes into effect, foreign paper will come in very rapidly, and there is now in this country $200,000 worth of these papers in bond, and under the new schedule they would come on the market at once. We want to know where we are going to be as to these papers, and we will simply shut the Whippany Mill down until we find out what will be done.

Communications.

"The Making of News."

NEW YORK, June 23, 1894.

Editor of The Paper Trade Journal:

Noticing the wail of Mr. Hall in the article "The Making of News," in your edition of this date, I beg to say that it appears entirely uncalled for to anyone with any knowledge of the situation. The news manufacturers have brought their troubles upon themselves of their own volition. A more consummate set of fools, commercially speaking, do not exist. Why should they go on year after year increasing their output far beyond the legitimate demands of the country, "robbing themselves," as Mr. Hall puts it, "to feed the newspaper," if they are not as I characterize them? No one familiar with the course of the industry for the past twenty years has the slightest sympathy to waste upon them. I can safely assert that there has not been a year since 1882 in which the output of news has not exceeded by 5 to 10 per cent. the legitimate demands of the market; and yet the building of mills and putting in of new machines has proceeded at a merry pace, as though there was no hereafter or never to be a settling day.

Referring to the comparison of the capital necessary for a paper mill or a newspaper, and the smaller profit earned by the former, the question naturally arises why the paper mill proprietor did not put his money into a newspaper, for the relative position of the two industries has been the same in this country for ten years past. We all have to learn, and some mill proprietors are being educated just now at a rapid rate. The only hope of the "news" trade is that the lessons shall not be forgotten with the revival of industries. NEWSPAPER.

Changes, Removals and New Firms.

Ray Thompson, publisher, Richmond, Me., has sold out.

A. T. Patterson, publisher, Chillicothe, Mo., has sold out.

Perkins & Ellis, booksellers, &c., Clarksville, Tenn., have sold out.

Everly & March, printers, Milwaukee, Wis., have dissolved partnership.

The *Advance* is the name of a new paper at Hantsport, Hants County, N. S.

A new weekly home journal named *Light* has been started at Vancouver, B. C.

A new humorous paper published in Montreal, Que., is known as *Grinchuckle*.

Stahl & Lovette, dealers in wall paper, Norfolk, Va., have dissolved partnership.

Garrett & Vance, printers, Jacksonville, Fla., have been succeeded by A. B. Vance.

McClure Brothers, publishers of the Saturday *Herald*, Sullivan, Ill., have sold out.

Scranton & Felters, dealers in wall paper, Birmingham, Ala., have dissolved partnership.

W. F. Rowe, printer, Taylor's Falls, Minn., has removed to Lindstrom, same State.

The Canadian *Sun*, organ of the Patrons of Industry, London, Ont., will be removed to Toronto.

The Westminster *News* is a new four page morning daily published at New Westminster, B. C.

The affairs of the *Tribune* Printing Company, West Toronto Junction, Ont., are being wound up.

A bi-weekly paper called the Prince Edward *Islander* has been started at Charlottetown, P. E. I.

Le Manitoba, a journal published in the French language at Winnipeg, Man., has ceased publication.

Louis Hirsch, printer and stamp manufacturer, Chillicothe, Mo., has been succeeded by Hirsch & Myers.

B. F. Johnson & Co., publishers, Richmond, Va., have been incorporated as the B. F. Johnson Publishing Company.

The H. W. Hageman Publishing Company, New York, has recently been formed with H. W. Hageman as president.

The Pollard Printing Company, Napanee, Ont., has been incorporated to publish the Napanee *Express*. Capital stock, $5,000.

On petition of the Dominion Paper Company the International Railway Publishing Company, of Montreal, Que., will go into liquidation.

E. R. Alderman & Sons, Marietta, Ohio, proprietors of the Marietta *Weekly* and *Tri-Weekly Register* and the Marietta Book Store, have started an eight-page daily paper.

D. Appleton & Co., publishers, New York, have removed from their old stand on Bond street to their new building at the corner of Fifth avenue and Thirteenth street.

The copartnership existing between Fred C. Laird and W. H. Lee, under the firm name of Laird & Lee, publishers,

Chicago, Ill., has been dissolved, Mr. Laird retiring. Mr. Lee will continue the business under the old style of Laird & Lee.

The Acme Stationery and Paper Company, whose New York salesroom at 69 Duane street was recently burned out, has opened a new office and sample room at 74 Duane street.

Rhoades, Utter & Co., paper dealers, Rockford, Ill., have dissolved partnership, and have been succeeded by C. M. Utter, who will continue the business at 426 and 428 Cedar street, that city.

The Ribbon and Ticker Paper Company has been organized at Paterson, N. J., to cut paper to narrow widths. A. B. Pearce is president, James Wilson treasurer, and A. B. Huyssoon secretary.

The Perfection Card Company, Brooklyn, N. Y., has been incorporated to manufacture playing cards; capital, $60,000, and directors, Bertram Groesbeck, Geo. F. Jones and Peter F. Downey, Brooklyn.

The Britannica Publishing House, New York, has been incorporated to manufacture and sell books and pamphlets; capital, $20,000, and directors, George R. Macey and Archibald Stewart, of New York city, and William Cannon, of Brooklyn.

The H. Guggenheimer Company, of New York, has been incorporated to manufacture and sell ball programs, show cards, &c.; capital, $40,000, and directors, Henry Guggenheimer, Henrietta Guggenheimer, New York, and Henry Schnackenberg, Yonkers.

It is proposed to form a joint stock company to carry on the wholesale stationery business of R. Miller, Son & Co., Montreal. The company will be known as the Robert Miller Company, with a capital of $30,000, and notice of application for incorporation has been given.

The Saratoga Press Association, Saratoga Springs, N. Y., has been incorporated to publish a newspaper with a capital of $6,000. The directors are David F. Ritchie, George B. Eddy, Robert G. Smythe, Judson H. Stafford, John W. Howe, W. M. W. Blackmer and William A. Pierson, of Saratoga Springs.

Failures.

The World Mercantile Agency made a voluntary assignment in the Probate Court at New Haven, Conn., on June 21, under a vote of directors. Wm. A. Wright was named for trustee. The liabilities are $6,000 and the assets nominal. The agency has of late been embarrassed by shortages found in the accounts of a former manager.

By agreement of the creditors of Charles L. Webster & Co., publishers, New York, who were compelled to make an assignment several weeks ago, the business of that firm is to be continued until July 1, 1895, under the management of three trustees. They are William H. Payne, president of the Mount Morris Bank, Charles E. Barrow and the assignee, Bainbridge Colby. Mr. Barrow has for some time been associated with the house, which names among its creditors the widow of General Grant, the heirs of General Sherman, various well-known periodicals and other publishers, Edmund Clarence Stedman, &c. Mrs. Samuel Longhorne Clemens holds the copyright on Mark Twain's books, which is regarded as the most valuable asset of Charles L. Webster & Co., who own the plates.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; T. D., trust deed, and Real, a mortgage on real estate.]

EASTERN STATES.

Mortgagor.	*Amount.*
Tafft-Gardner-Shepard Company, Boston, Mass	$500
P. J. Rourke & Co., Cambridge, Mass.	1,200
E. A. Walsh, Worcester, Mass.	3,000

MIDDLE STATES,

Jane Gunning, Brooklyn, N. Y.	200

WESTERN STATES.

B. M. Gopchevitch, San Francisco, Cal. (B. S.)	1
Frank F. Fulcher, Marion, Ind.	3,000
S. W. Holcombe, Boone, Ia.	400
C. F. Weaver, Boone, Ia. (B. S.)	800
O. S. Todd, Columbus Junction, Ia.	300
E. H. Rockwell, Farmington, Ia.	400
C. C. Ellis, Sioux City, Ia.	850
George M. Dewey, Chanute, Kan.	2,030
Roudebush Publishing Company, Topeka, Kan.	475
The *Young Men's Journal* Publishing Company, Omaha, Neb.	120
F. C. Braden, Portland, Ore.	1,000
Wisconsin Historical Publishing Company, Fond du Lac, Wis.	1,049
J. M. Everly, Milwaukee, Wis.	1,800
Prevost & Pfeifer, Tacoma, Wash.	4,000

SOUTHERN STATES.

American Publishing and Engraving Company, Atlanta, Ga.	5,000
Atlanta School Book Company, Atlanta, Ga.	400
Dixon Brothers, Springfield, Mo.	147
Charles H. Ames, St. Louis, Mo	250
The *Journal* Company, Knoxville, Tenn. (T. D.)	11,810
John D. Roberts, Temple, Tex. (T. D.)	—

LIENS DISCHARGED.

Island Reporter Printing and Publishing Company, Sydney, N. S. (B. S.)	300

Fires.

E. A. Thomas & Co., stationers, Spokane, Wash., have been damaged by fire.

George T. Lathrop, dealer in books and stationery, Houston, Tex., has been damaged by fire.

At Grandview, Tex., on June 20, the *Sentinel* building and all fixtures of the printing office were burned. Insurance, $1,900.

The rag warehouse of Max Bernstein, 30 Hester street, New York, caught fire yesterday morning, and before the flames were extinguished a loss of $400 was caused.

The warehouse of the Paul Paper Company, Menasha, Wis., was struck by lightning on the night of June 16 and burned. Loss, $12,000; insured for $8,000.

The Rockdale Mills, Hamilton, Ohio, were destroyed by fire on Monday night, June 25. The mill was run by the Haldeman Paper Company on roofing, sheathing, and carpet lining papers. Loss, $30,000; insurance, $8,000. The fire is supposed to have originated from lightning striking the mill.

A Retrospect.

About one month ago THE PAPER TRADE JOURNAL completed the twenty-second year of its publication, having been started on May 27, 1872, by the late Howard Lockwood. On June 15, 1873, a department was added to THE JOURNAL devoted to the stationery trade, but it soon outgrew the space allotted to it and a separate paper was established. This week it published the following:

AFTER TWENTY YEARS.

With this issue *The American Stationer* completes its thirty-fifth volume in the twenty-first year of its publication. Started in April, 1874, as a semi-monthly paper, and in a new field of trade journalism, it stood out for and took position as a reliable, candid and helpful representative of trade interests. Less than three years later it was issued weekly, and has been published every Thursday for more than seventeen years, with unshaken steadiness of purpose. How well it has succeeded we leave to the judgment of those who have watched its course.

No unworthy motive has ever inspired a line which has appeared in its columns.

Its ambition is to be useful.

To the ability, enterprise and sagacity of the late Howard Lockwood, its founder, is chiefly to be attributed the success which the *Stationer* has attained.

To all friends and patrons we return thanks, with the assurance that the record which the *Stationer* has made will be its guaranty for the future.

A few months after *The Stationer* made its appearance, LOCKWOOD'S DIRECTORY OF THE PAPER AND STATIONERY TRADES was first published, and has been issued regularly every year since, the new volume, now in press and which will be ready for delivery in a short time, making the *twentieth* annual edition.

It is also to be noted, that in the early years of THE PAPER TRADE JOURNAL there was a department devoted to bookmaking, out of which grew *The American Bookmaker*.

As a natural sequence a printing department was built up as the years went by, so that to-day the Lockwood Press gives steady employment to about 160 people.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, June 29, 1894.

THE MONEY MARKET.—The stock market was dull, and the majority of moving shares closed at lower figures. Call loans on stock collateral are made at 1 per cent., and owing to the cheapness of call loans there is little inquiry for time accommodation. Rates for time loans continued at 1 per cent. for thirty days, 1½ per cent. for sixty days, 2 per cent. for ninety days to four months and 2½ per cent. for five months. The offerings, as usual about July 1, were somewhat lighter, banks holding off for an inquiry from the country. Choice commercial paper continued scarce. Best acceptances 2½ per cent.; prime sixty and ninety day indorsed bills receivable, 2¾@3 per cent.; four months commission house names, 3 per cent.; prime single names 3½@4 per cent. and good four and six months' singles, 4½@5½ per cent. As in the case of time loans, the banks with country correspondence were less desirous of making purchases of paper, although there was no improvement in rates. There was a moderate business in foreign exchange, without important change in rates. "Futures" were again freely offered, and the demand was light. Posted rates were $4.88½ for sixty days and $4.90 for sight. Actual rates were $4.87¼@4.87½ for sixty days and 4.88¼@4.89 for sight.

THE PAPER TRADE.—There has been very little of special interest developed in the paper trade during the past week. Business does not pick up to any extent, but continues along as it has been for some time. Product in all lines is restricted and prices droop. Mills making standard, uniform grades have the advantage of course, and complain less than others. The Strawboard men, who have been endeavoring for a long time to stop the cutting which has been going on, have at last come to an agreement, and on Wednesday last new prices went into effect. They are $24 and $22.50 at the mill for No. 1 and No. 2 Boards respectively. Prices of Tissues have been forced down very much, both for manilla and colored.

JUTE BUTTS.—The market is quiet, and new crop butts are quoted at 1¼c. There was spot sale of 1,500 bales mixing butts at 1.65c.

WOOD PULP.—The market is quiet and entirely without features other than those referred to last week.

WOOD FIBRE.—The market as a rule is quiet, and none of the various grades are moving at a brisk pace. Domestic Soda is quoted at 2¼@3½c. for Bleached. Domestic Sulphite is quoted at 2@2½c., as to quality, for Unbleached, and 3½c. for Bleached. Foreign grades are quoted as follows: Unbleached Pine, soda process, 2.60@2.75c.; Bleached, same process, 3½@3.90c.; Unbleached, sulphite process, 2.50@3.25c.; Bleached, do., 4@4½c.; Bleached Straw Pulp, 4@4½c. Imports of Chemical Fibre this week aggregated 254 tons, being all from Copenhagen.

FOREIGN RAGS AND PAPER STOCK.—There is no activity in the rag market to speak of. Sales are small and unimportant except in Japan Blues, of which 1,500 bales were sold this week at a price believed to be about 1.32½c. Imports for the week aggregated 5,643 bs. and 254 tons, being 1,859 bs. rags, 25 bs. papers, 254 tons chemical fibre and 3,759 bs. manillas. Ports of shipment and quantities are as follows: Bremen, 140 bs. rags, 25 bs. papers, 1,393 bs. manillas; Buenos Ayres, 97 bs. rags; Copenhagen, 254 tons chemical fibre and 177 bs. manillas; Glasgow, 39 bs. rags; Hiogo, 800 bs. rags; Hull, 200 bs. rags, 826 bs. manillas; Leghorn, 164 bs. rags; Liverpool, 16 bs. rags, 367 bs. manillas; London, 287 bs. rags; Newcastle, 657 bs. manillas; Rotterdam, 116 bs. rags, 339 bs. manillas.

DOMESTIC RAGS.—Trade is quiet. No. 1 Whites are quoted at 3¼@3.30c. delivered, Soiled Whites at 2.20c., Ordinary 2's, 75@90c., and extra quality Thirds and Blues, 1⅛@1¼c.

BAGGING, &c.—The market for Gunny is quiet, but within the last ten days there have been sales aggregating 1,600 tons—one lot of 1,000 tons, another of 500 tons and a third of 100 tons—all at a shade over 1c., while 1.03½c. is the shipment price now quoted. In Manilla Rope we note sales of 150 tons foreign, in lots, at from 1.95@2c. Manilla imports for the week aggregated 3,759 bales, being 1,393 bs. from Bremen, 177 bs. from Copenhagen, 826 bs. from Hull, 367 bs. from Liverpool, 657 bs. from Newcastle and 339 bs. from Rotterdam.

OLD PAPERS.—There is a moderate call for old papers, but not sufficient to cause any rise in prices. We quote: No. 1 Hard White Shavings, 2¼c.; No. 1 Soft White do., strictly free from wood, 2.15c.; Soft White do., ordinary, 1⅞@2c.; Old Ledgers, 2.10c.; Solid Printed Books, 1¼c.; Mixed Shavings, No. 1, 1.20@1.25c.; Mixed Shavings, No. 2, ¼@1c.; Extra No. 1 Manillas, 1.15c.; No. 1 Manillas, ordinary, .80c.; No. 2 Manillas, .60c.; Light Book Stock, 1½c.; Folded News, .40c.; Mixed Papers, .40c.; Commons, 25@30c.; Straw Clippings, .45@.50c.; Binders' do., .50c.

STRAW.—Straw is weak and the market favors buyers. We quote: No. 1 Long Rye at 60c.; No. 2 Long Rye at 50@55c.; Short Rye at 45@50c.; Wheat at 40@45c.; Oat at 50@55c.

ROSINS.—The Rosin market is quiet, but prices have advanced and are firm. We quote: Common to Good Strained, $1.60@1.65; E, $1.80; F, $1.95@2; G, $2.10@2.15; H, $2.40@2.45; I, $2.65@2.70; K, $3; M, $3.15@3.20; N, $3.35@3.40; W. G., $3@3.50.

CHEMICALS.—Prices are lower in some lines of paper makers' chemicals, and as a rule the market is quiet all around. In Bleaching Powder the United Alkali Company has reduced its price for prime hardwood, July shipment, to 1¼c., which fact will tend to affect disadvantageously other makes on spot. Spot sales have been made this week at 2@2½c. Sal Soda is unchanged, Alkali is quiet, and Caustic Soda remains as it has been. During the week there have been sales of 100 cks. Bleach at 2@2½c.; 50 tons Soda Ash at 1½c.; 100 tons 58 per cent. Alkali at 1@1.20c.; 150 drums Caustic at 2.70@2.82½c.; 10 cs. German Ultramarine at 17¼c.

CHINA CLAY.—A slight jobbing business is being done and the market remains very easy. Small orders are executed to satisfy consumers. Prices are held at $12@17.50, as to quality and quantity.

TWINES.—The market is quiet and there is only a moderate call for goods. We quote: Sisal Hay Rope, 5@6c.; Sisal Lath Yarn, fine, 9¼c., and medium, 9c.; Jute Lines, 7½c.; Jute Ready, 7@7½c.; New Zealand Hay Rope, 6¼@7¼c.; New Zealand Lath Yarn, fine, 9¼c.; medium, 8¾c. Twines—Hemp, 4½ and 6 B Russia, 12c.; 4½ and 6 A American, 12c.; 4½ and 6 D Jute, 9½c.; 4½ and 6 L Jute, 9c.; Hemp Ball, 18 B C, 17c.; 18 C, 15c.; Russian Hemp Hay Rope, 9c.

COAL.—There are no new features in the Anthracite coal market. The product is large and there is a disposition on the part of the producer to make very favorable prices in order to move his stock. Buying of domestic sizes for future requirement does not appear to be large in any direction, and as the amount of coal going into use for industrial and steam purposes is likely to be much less in the future than it has been during the past few months, a falling off in the tonnage or demand may naturally be looked for. Soft coal is being sold at old time prices in many places and west of the Alleghanies everything is going on in easy fashion. Miners in most districts of Northern Illinois are at work, having accepted the scale which was made for them, and the remainder will soon do so; there is also expected to be a very general resumption in the southern part of that State and also in Indiana, for most of the miners favor a return to work and are kept out only through the efforts of some of the local labor leaders. In Ohio everything seems to be working fairly well upon the basis agreed upon except in those districts where the men did not secure the differential, but even there work, it is said, will be resumed at an early day.

EDWIN BUTTERWORTH & CO., MANCHESTER ENGLAND,
PACKERS OF ALL KINDS OF
Paper Stock, Cotton Waste and Buffalo Sizing, Wood Pulp, Moist and Air Dry Pulp, Soda and Ground Pulp,
83 GUNNY BAGGING, &c.
OFFICE IN NEW YORK:
Vanderbilt Building, No. 132 Nassau Street,
JAMES FIRNIE, C. S. DEMAREST, Managers.

WATERBURY
Felts and Jackets,
MANUFACTURED BY
H. WATERBURY & SONS CO.,
ORISKANY, N. Y.
Adapted to every grade of paper, from the finest to the coarsest.
The Largest Manufacturers of Paper Makers' Felts in the World.
Our wet machine or pulp felts are unequaled for durability.
For WRITING and LEDGER PAPERS We warrant a felt equal to anything imported.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.

DEALERS' SELLING PRICES.

Ledger and Record	$0.18	@	$0.24
Flat Caps, superfines	14	@	16
Flat Caps, fines	11½	@	13
Flat Caps, engine sized	7½	@	9
Blotting, American	8	@	15
Blotting, English	17	@	....
Book, super sized and calendered	6	@	9
Book, super sized and tinted	6	@	7½
Book, extra machine finish	5½	@	6
Book, machine finish, low grade	5	@	5½
News, No. 1	4	@	4½
News, rag and wood	3	@	3½
Poster	5	@	7
Hanging, superfine, No. 1	8	@	10
Hanging, superfine, No. 2	6	@	8
Hanging, machine satin	4	@	4½
Hanging, white blank, No. 1	4	@	4½
Hanging, curtain	3½	@	4
Hanging, brown	2½	@	3
Colored papers, double medium	6½	@	8
Colored papers, glazed medium	7½	@	8½
Colored papers, tobacco	8½	@	9½
Colored papers, tissues, 20×30, ℔ ream	1.10	@	1.35
Tissues, black, 20×30, ℔ ream	1.40	@	1.50
White tissue, 20×30, ℔ ream	85	@	1.00
White tissue, 24×36, ℔ ream	1.30	@	1.50
Manillas, Flour sack, cream	10½	@	....
Manillas, Flour sack, drab	9½	@	11
Manillas, Rope, unbleached No. 1	9½	@	11
Manillas, Rope, unbleached No. 2	7½	@	9
Manillas, No. 1, light weight	6½	@	6¾
Manillas, No. 1, heavy weight	6¾	@	6½
Manillas, No. 2	5	@	6
Manillas, Bogus	2½	@	3½
Wrapping Parchment	16	@	....
Tissue Manillas, full count, weight and size, 24×36, other sizes in proportion	75	@	80
Hardware, light colored, No. 1	9	@	10
Hardware, No. 1, glazed, tarred	7	@	8
Hardware, No. 1, glazed	4½	@	5
Binders' Boards, ℔ ton, No. 1	70.00	@	90.00
Binders' Boards, ℔ ton, No. 2	40.00	@	50.00
Strawboards, air dried, No. 1, ℔ ton	47.50	@	....
Strawboards, steam dried, No. 1, ℔ ton f. o. b. mill	....	@	24.00
Straw Wrapping, basis, 15×20, 15½ lbs., 20 sheets—			
36×40, from 38 to 42 lbs. ℔ rm	85	@	....
30×40, from 30 to 34 lbs. ℔ rm	....	@	72
24×36, from 24 to 26 lbs. ℔ rm	....	@	60
22×32, from 20 to 26 lbs. ℔ rm	50	@	....
20×30, 21 lbs., ℔ rm	....	@	44
20×30, from 14 to 17 lbs. ℔ rm	36	@	....
16×22, from 12 to 13 lbs. ℔ rm	28	@	....
18×28	....	@	32
15×20, 10 lbs. ℔ rm.	17	@	19
15×20, from 7 to 8½ lbs. ℔ rm	17	@	19
14×18	....	@	15
12×16	....	@	13
12×15	....	@	11
Straw Wrapping, ℔ lb., heavy weight	1.75	@	1.85
Straw Wrapping, ℔ lb., light weight	1¾	@	....
Cigarette, Straw Tissue, per case of 100 boxes, 50 books to the box, 200 sheets to the book	21.00	@	30.00
Tea Papers, 16 sheet quires—			
12×18	18	@	20
14×20	22	@	....
Card Middles, ground wood	5½	@	6¼
Card Middles, long fibre wood	8½	@	9
Card Middles, rag and wood	6	@	9
Pulp Lined Boards, single manilla, No. 100 and heavier	42.50	@	....
Pulp Lined Boards, double manilla, No. 100 and heavier	47.50	@	....

Chemicals, Coloring Materials, &c

Alkali, 58 ℔ cent	1	@	1.20
Alum, lump	1.65	@	....
Alum, ground	1.75	@	....
Alum, Keystone	1½	@	¼
Alum, Diamond	....	@	2½
Alum, pearl	2½	@	2¾
Alum, porous	2½	@	2½
Alum, Merrimac porous	2	@	....
Aluminous Cake	....	@	1¼
Anti-Chlorine	....	@	2¼
Bichromate Potash, American	....	@	10
Bleaching Powders, spot	2	@	2¼
Cambridge Ochre	11.25	@	....
Caustic Soda, 60 ℔ cent	2.70	@	2.82½
Clay, China, English, ℔ ton	12.50	@	17.00
Clay, China, "Star"	12.50	@	....
Clay, China, "Keystone"	10.75	@	....
Clay, South Carolina, ℔ ton	9.50	@	10.00
Clay, Terra Alba, French, ℔ cwt	1.00	@	1.12½
Clay, Terra Alba, American, No. 1	95	@	1.00
Corn Starch	3	@	3½
Copperas, American	....	@	80
Extract Logwood	9½	@	....
Mineral Pulp	10.25	@	....
Orange Mineral	....	@	9½
Potato Starch	4½	@	4¾
Prussian Blue, dry	30	@	35
Prussiate Potash, American	....	@	34½
Rosins, common to good strained, ℔ bbl	1.60	@	1.65
Rosins, E, ℔ bbl	....	@	1.80
Rosins, F, ℔ bbl	1.95	@	2.00
Rosins, G, ℔ bbl	2.10	@	2.15
Rosins, H, ℔ bbl	2.40	@	2.45
Rosins, I, ℔ bbl	2.65	@	2.70
Rosins, K, ℔ bbl	3.00	@	....
Rosins, M, ℔ bbl	3.15	@	3.20
Rosins, N, ℔ bbl	3.35	@	3.40
Rosins, W G, ℔ bbl	....	@	3.50
Sal Soda	1.10	@	....
Soda Ash Caustic, 48 ℔ cent	1.60	@	1.65
Soda Ash, carbonated, 48 ℔ cent	1.67½	@	1.70
Soluble Blue	40	@	65
Spanish Brown	½	@	1
Sugar Lead, white	12	@	....
Sugar Lead, brown	7	@	....
Sulphate of Alumina	....	@	2¼
Sulphuric Acid, 66 ℔ cent	1	@	1¼
Ultramarine, blue	14	@	17½
Venetian Red	1	@	1½
Vitriol, blue	5½	@	5¾
Yellow Ochre Rochelle	1.35	@	1.50

English Old Papers and Shavings.

Hard Shavings, No. 1	2	@	....
Soft Shavings, No. 1	2½	@	2¾
White and Colored Shavings, No. 1	1½	@	1⅝
White and Colored Shavings, No. 2	1	@	1¼
Cream Post Shavings	2½	@	....
Paper Collar Cuttings	....	@	2
Briefs and Letters	1½	@	1¾
Books and Pamphlets	1.10	@	....
Old Newspapers	....	@	....
Broken News and Letters	¾	@	1
Old Blank Books	2½	@	2¾
White and Buff Railway Sheets	1½	@	....

Japanese Rags.

Blues, Hiogo	1.45	@	....

BOSTON MARKET.

Paper Stock.

White Rags, No. 1	3½	@	3¾
No. 2 Whites	2	@	....
Common Seconds	2	@	2¼
Thirds and Blues	1	@	1.80
Southern Mixed Rags	80	@	1
Colors, country	½	@	¾
Colors, city	25	@	30
New Calicoes, light	2	@	2¼
New Calicoes, dark	1¼	@	1½
Shirt Cuttings, best	4¾	@	5
Shirt Cuttings, good	4	@	4¼
Shirt Cuttings, unbleached	4	@	4¼
Shirt Cuttings, unbleached No. 2	....	@	3
Shirt Cuttings, cheviots	3	@	3¼
Overall Cuttings, blue	....	@	2
Overall Cuttings, brown	2	@	2½
Shoe Rags, bleached	3½	@	4
Shoe Rags, unbleached	3½	@	3¾
Shoe Rags, brown	3	@	3¼
Cotton Flannels, bleached	3¾	@	4
Cotton Flannels, unbleached	3½	@	3¾
Corset Rags, drab	3½	@	3¾
Corset Rags, white	4	@	....
Tailors' Seconds	1¾	@	....
Tailors' Colors	25	@	35
Cotton Canvas	3	@	3¼
Cotton Canvas, No. 2	....	@	1½
Linen Canvas	1¾	@	2
New Canvas Cutting	4	@	4¼
Insole Canvas	3	@	3½
Print Papers, best	80	@	85
Print Papers, ordinary	22	@	....
Folded News	35	@	40
Old Waste Papers	20	@	25
Manilla Paper, No. 1	1.20	@	1.25
Manilla Paper, good mixed	85	@	90
Manilla Paper, blues	65	@	70
Mixed Book Stock	95	@	1
Books and Pamphlets	1.15	@	1¼
Book Stock, light	¾	@	1
Ledgers and Letters	1¾	@	2
Soft Book Shavings	....	@	1¾
Hard White Book Shavings	2¼	@	2½
Leather Board Chips	75	@	85
Straw Chips	45	@	50
Shivey Bagging	1½	@	....
No. 1 Factory Bagging	1	@	....
Burlap Bagging	1.00	@	1.05
Burlap Bagging, large pieces	85	@	1¼
Kentucky Bagging	1½	@	2
Mixed Bagging	½	@	....
No. 2 Bagging	½	@	¾
Shakings, soft	½	@	....
Tarred Shakings	1	@	1¼
Standing Rigging	2½	@	2¾
Standing Rigging, foreign	2¾	@	3.15
Bolt Rope	2	@	2.15
Oakum Junk, No. 2	1½	@	1¾
Tarred Paper Junk	1.15	@	1.20
Tarred Paper Junk, inferior	½	@	....
Manilla Rope	2	@	2.10
Tarred Manilla	1½	@	....
Hemp Strings	1½	@	2
Sisal Strings	80	@	1
Wool Strings	90	@	1.10
Flax Tow	¾	@	1
Flax Waste	¾	@	1

New Papers.

Superfine Book	6	@	7
Fine Book	5½	@	6
News, rag and wood	3	@	....
Manilla, Cream Rope	9½	@	10
Manilla, No. 1, Rope	7½	@	8½
Manilla, Extra Jute	5½	@	6
Manilla, Jute and Gunny	5½	@	6
Manilla, No. 2	4	@	4½
Manilla, Bogus	2	@	3
Hardware, No. 1, tarred	7½	@	8½
Hardware, No. 2	6½	@	7
Hardware, red	4¾	@	5½
Strawboards, air dried, ℔ ton	37½	@	45.00
Strawboards, steam dried, ℔ ton	30.00	@	35.00
Straw Wrapping, heavy	1.00	@	2¼
Straw Wrapping, light	2¼	@	2½
Binders' Boards, ℔ ton	45.00	@	50.00
Leather Board, Common, ℔ lb	3	@	4
Leather Board, counter	5	@	8
Leather Board, extra	8	@	10
Tar Boards, ℔ ton	100.00	@	110.00

Chemicals.

Alkali	1.00	@	1.10
Aluminous Cake, currency	1¾	@	1¾
Alum, American ground	....	@	1.85
Alum, American lump	....	@	1.85
Anti-Chlorine	2	@	2½
Bichromate Potash, American	10	@	....
Bleaching Powders	2¼	@	2¾
Blackley Blue	2.00	@	3.00
Caustic Soda, 74 ℔ cent	....	@	2.65
Clay, English, ℔ ton	14.00	@	18.00
Clay, American, ℔ ton	10.00	@	11.00
Copperas, ℔ lb	65	@	75
Extract Logwood	5½	@	11¾
Lime, Rockland, ℔ bbl	90	@	....
Prussian Blue, ℔ lb	50	@	60
Prussiate Potash, American, yellow	22	@	22½
Prussiate Potash, red	38	@	38½
Rosin, common strained, ℔ bbl	1.90	@	2.50
Rosin, Medium	2.20	@	3.00
Rosin, extra pale, ℔ bbl	3.00	@	4.50
Sal Soda, English, ℔ lb	1.00	@	1.05
Soda Ash, 48 ℔ cent. caustic	1.40	@	1.60
Soda Ash, 48 ℔ cent. carbonated	1.37	@	1.50
Soluble Blue	55	@	65
Sugar Lead, white	11	@	12
Sugar Lead, brown	5½	@	6
Sulphuric Acid, 66°	¾	@	1¼
Terra Alba, ℔ ton	15.00	@	20.00
Ultramarine, ℔ lb	12½	@	15
Venetian Red, ℔ lb	1¾	@	2¾
Vitriol, Blue	3½	@	3¾
Yellow Ochre	½	@	1

Wants and For Sale.

Twenty-five words or less, one dollar each insertion. Over twenty-five words, four cents a word each insertion, up to eighty words. Cash should accompany order.

Over eighty words, or displayed advertising, will be charged for by the inch, according to our regular schedule of rates.

Answers can come in our care and will be promptly forwarded without extra charge.

WANTED—SITUATION AS FOREMAN IN book, news or manilla mill; long experience on jute, sulphite and all grades of manilla stock. Address MANILLA, care Journal.

WANTED—A GOOD MAN FOR BOSS MAchine tender, to take charge of three machines running on manillas and express papers; none but the best need apply; good wages to the right man. Address, giving references, YORK HAVEN PAPER CO., York Haven, York County, Pa.

WANTED—BY FIRST-CLASS PAPER MAKER, a position as superintendent or salesman for mill making book and writing; first-class references. P. H., care Journal.

WANTED—A GOOD, STEADY, RELIABLE man, thoroughly acquainted with liquor making and capable of handling digesters and sulphite plant, for position as night foreman; must have good references. Apply, stating experience and what mills have worked in, R., Paper Trade Journal.

SITUATIONS WANTED BY FIRST-CLASS superintendents, machine tenders and engineers; worked on all grades of paper; both slow and fast running machines; can furnish best references if required. Apply to EAGLE LODGE No. 1, Brotherhood of Paper Makers, Box 672, Holyoke, Mass.

WANTED—BY A FIRST-CLASS MAN, SITUAtion as foreman; thoroughly understands the handling of book, news and manilla; can furnish best reference from one of the largest companies in New England. Address WATERPROOF MANILLA, care of Paper Trade Journal.

WANTED—TO LEASE OR PURCHASE, MILL with Fourdrinier machine, 84 inch preferred, suitable for machine finish papers; rental must be low, on basis of present values. I. A. C., care Journal.

AGENCY WANTED

By a London pulp commission firm of responsible standing for the sale of American or Canadian pulps; intimately connected with the trade; highest banking references. Please quote c. i. f. British ports, thirty days, with samples, to

O. LECHLA,
134 Upper Thames Street, London, E. C.

TO RENT—A FRONT ROOM, CONTAINING about 550 square feet of floor space, first loft, in building occupied by The Lockwood Press, on the southwest corner of Duane and Church Streets. Apply to HOWARD LOCKWOOD & CO., on the premises.

FOR SALE—A TISSUE MILL AND A MANILLA mill on favorable terms. I. S. DILLINGHAM, 67 Federal street, Boston Mass.

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One 77 inch Fourdrinier Machine, Rice, Barton & Fales' make. 16 inch coucher, gun metal press rolls and rubber size roll. The machine is in perfect order and can be seen running any time during the next six weeks at our mill; our only reason for selling is that we intend to put in a larger machine.

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FOR SALE.

Large and old established business with an extensive and profitable trade, envelope, paper bag and paper box manufactory, bookbindery, wholesale and retail stationery department and plant of thirteen printing presses, all in first-class condition; thoroughly equipped for doing anything in the printing line; will sell whole or two-thirds interest; ill health of proprietor reason for selling. For terms and further particulars address J. S. W., care Paper Trade Journal.

FOR SALE.

Fourdrinier Machine, New and Modern; wire, 92 inches wide, 45 feet long; forty 2¼ inch table rolls, three brass suction boxes; gun metal and rubber press rolls; thirteen dryers, 48×88; nine stack calenders, reels, cutter; Manning winder; cone pulley driving train.

THE BLACK & CLAWSON CO.,
Hamilton, Ohio.

FOR SALE.

Four 1,000 pound Umpherston Beating Engines, complete, with patent copper washers, sand traps, &c. Engines in first-class condition and now running, but to be taken out to make room for other machinery. Address UMPHERSTON,

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M. THOMAS & SONS, Auctioneers,

Will Sell at Public Sale,

Thursday, July 26, 1894, at 12 M.,

At the Philadelphia Exchange, Third and Walnut Streets, Philadelphia, Pa.,

The MANAYUNK PULP WORKS, 7½ acres of ground and machinery; SPRING CITY PAPER MILLS, 22 acres of ground and machinery, by virtue of the decree of the United States Circuit Court, absolutely clear of all incumbrances. For information and catalogues of machinery apply to ALFRED S. MILLER, Assignee, Nos. 311-313 Drexel Building, or to

J. LEVERING JONES, Esq., No. 426 Drexel Bldg.
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One 84 inch Fourdrinier part to paper machine complete, with Gould screen.

One 74 inch Fourdrinier machine complete, Gould screen; gun metal press rolls, 15x75 inches; eight iron dryers, 36x72 inches; stack of nine chilled rolls, 72 inch face; upright reel and cone pulley cutter; Bess slitters.

One Gould screen, eight plates, 10x36 inches.
One Gould screen, eight plates, 12x40 inches.
One Barber's suction.

One 70 inch machine complete, Gould screen, Fourdrinier wire, 70x33 inches; first and second presses; eight iron dryers, 36x65¾ inches; stack five chilled rolls, four 12 inches, one 16x84 inches face; upright reel, slitter and winder.

Two new 1,000 pound Holyoke Machine Co. beaters, wood tubs.

One 1,000 pound iron tub beater.
Six beating engines, 36 inch roll, iron tubs.
One 1,200 pound Horne patent engine, new.
One rotary, 7x20, double riveted, 9-16 inch shell.
Three Scott & Roberts hydraulic pulp grinders.
Three Jordan engines.
Two rag cutters and duster.
Four iron dryers, 28x72 inches.

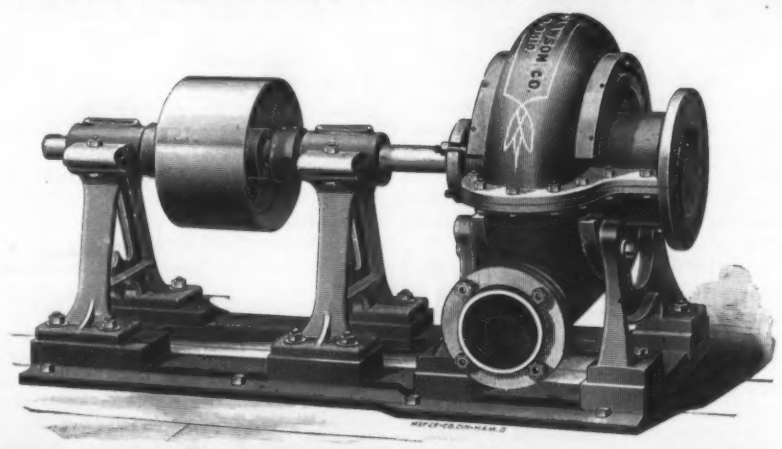
Send for catalogue of machinery, steam engines and boilers.

1,000 feet shafting, 2 to 6 inches diameter; 500 feet belting, 5 to 48 inches wide.

Parties wanting tools, stock or machinery used in a paper or pulp mill can find it here at a bargain.

F. H. DAVIS & CO., Exchange B'd'g, Boston, Mass.

THE BLACK & CLAWSON CO., MANUFACTURERS OF Paper Mill Machinery,



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Jordan Engines Refilled.

Screens, Calenders, Rag Cutters, Cylinder Molds, Deckel Straps, Paper Cutters, Screen Plates, Dandy Rolls, Stuff Box Trucks, Iron and Brass Castings.

REVOLVING REELS AND STACK REELS.

FOR PARTICULARS ADDRESS

THE BLACK & CLAWSON CO., Hamilton, Ohio.

MEDAL AWARDED AT WORLD'S FAIR FOR OUR SEAMLESS DRYER.

TO LEASE.

The Hanmer & Forbes Company's Manilla Mill.

BURNSIDE, Conn., April 10, 1894.

C. F. HANMER, Secretary.

NOTICE.

My attention having been called to the fact that certain parties are infringing certain Letters Patent granted to me, to wit: No. 212,866, dated March 4, 1879, covering a new form of carpet lining, and No. 235,698, dated December 21, 1880, covering the method of and apparatus for making the same, this is to notify all such persons, whether manufacturers or dealers, that any infringement of either of said patents will be prosecuted to the full extent of the law.

MOSES NEWTON, Patentee.

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Reaching by its rail connections all points South, Southwest and West.

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From Eastern and Northern Manufacturing Points to All Points.

Quick Time. Lowest Rates. Careful Handling.

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Jeffers Suction Screen,

Made in three sizes: Eight, Nine and Ten Plates.

SEND FOR BLUE PRINTS.

JUTE AND LINEN Paper Stock.

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Packers and Shippers of

Clean Jute Threads, Clean Jute Ropes, Gunny Bagging, Manilla Ropes, Bleached Linen Cuttings and Bleached Linen Threads.

ENGINE CLEANING WASTES,
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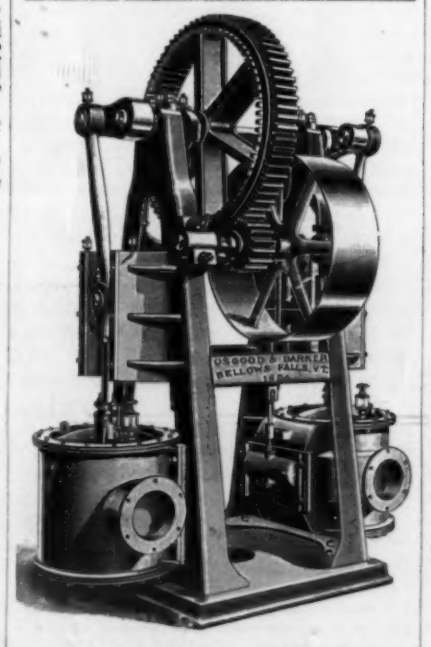
To a company that understand the coating business an offer will be made to furnish a fully equipped plant, ample room with plenty of power. Well situated for future business. Will either lease plant or take an interest in the business. Parties answering advertisement must be in position to furnish all necessary capital to buy stock and carry accounts.

Address A. B. C., care of Journal Office.



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Weight, Four Tons.

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Sulphur Burners,
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FOR SULPHITE PLANTS.

Fourdrinier and Cylinder Paper Machines,

With one, two, three or four stacks of dryers.

Upright Reels, with two or three Drums,
Reel Stacks and Revolving Reels,
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For buffing ends of the rolls.

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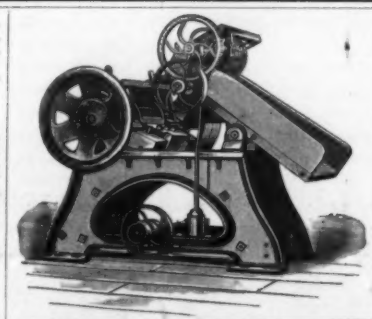

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New and Improved **Spiral Knife Rag Cutters,**

Cylinder Paper Machines, Rag Engines, Paper Cutters, Super and Machine and Chilled Iron and Paper Roll Calenders, Stuff and Fan Pumps, Shafting, Pulleys, Gearing and Paper Mill Machinery generally.

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RAG CUTTER,

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The only Mill west of Ohio.
We have demonstrated our ability to compete in

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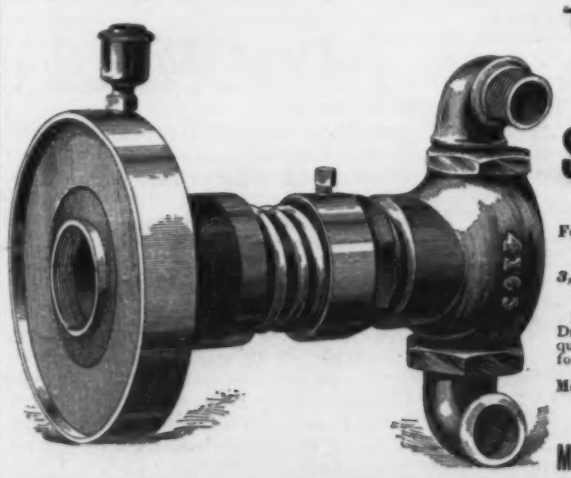

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Patented May 13, 1884, and Sept. 8, 1885.

For Rotary Paper Dryers and Revolving Cylinders.

3,000 NOW IN USE on PAPER MACHINES.

Does away with Packing the Dryers. No Leakage of Steam. Requires No Attention and will Last for Years.

Medal Awarded at World's Fair.

Send for Circular and Price List.

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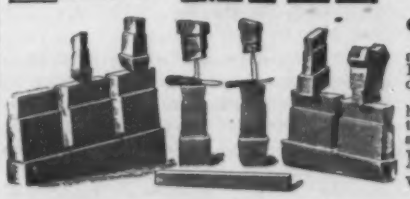

ON SHORTEST POSSIBLE NOTICE.

I make Cogs with blank head to be spaced and dressed after being driven; but make A SPECIALTY OF "READY DRESSED" cogs, which are ready to run the moment driven and keyed.

REMEMBER: I make ALL KINDS of Mill Cogs and have special facilities which will be of great service to you. WRITE AT ONCE for circular and instruction sheets, FREE.

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VISIT ME AT WORLD'S FAIR, Space 219, Column E E 4, AGRICULTURAL ANNEX.

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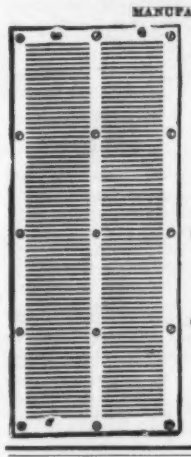
MANUFACTURERS OF



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—OF—

BRASS

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CAST METAL.

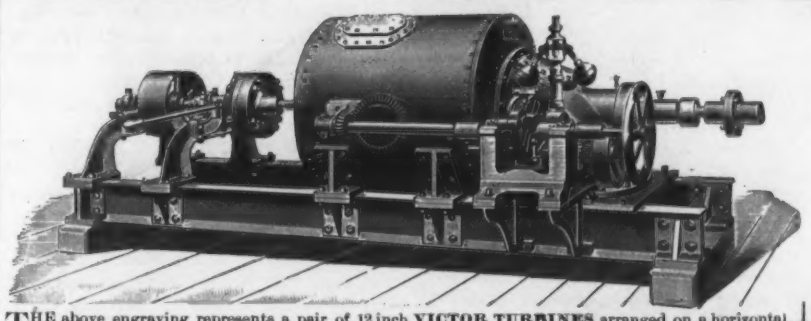
REPAIRING

OLD SCREEN PLATES

A SPECIALTY.

THE VICTOR TURBINE.

UPRIGHT or HORIZONTAL.



THE above engraving represents a pair of 12 inch **VICTOR TURBINES** arranged on a horizontal shaft, with Cast Iron Flume, Draft Tubes, End Bearings for Shaft, and Driving Pulleys complete, all mounted upon a substantial cast iron bed plate. The entire arrangement is very complete and strictly first class in every particular. We are now prepared to furnish Victor Turbines, either single or in pairs, on horizontal shafts, and where the situation admits of their use we recommend them.

In use in a large number of best Paper and Pulp Mills in this and other Countries.

TESTS IN HOLYOKE FLUME.

SIZE WHEEL.	HEAD IN FEET.	HORSE POWER.	PER CENT. OF USEFUL EFFECT
15 inch	18.05	30.17	.8932
17½ inch	17.96	36.35	.8930
20 inch	18.21	49.00	.8532
25 inch	17.09	68.62	.8584
30 inch	11.65	82.54	.8676
35 inch	17.29	133.19	.8497
40 inch	16.49	148.93	.8253
48 inch	15.51	179.29	.8202

CYLINDER OR REGISTER *GATE*.

INSURING HIGHEST PERCENTAGE OF USEFUL EFFECT AT

FULL AND PARTIAL GATE.

Such results, together with its nicely working gate and simple, strong and durable construction, should favorably commend it to the attention of all discriminating purchasers.

THESE WHEELS ARE OF VERY SUPERIOR WORKMANSHIP AND FINISH.

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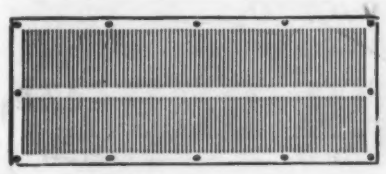

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SCREEN PLATES of SPECIAL BRASS,

MADE BY THE

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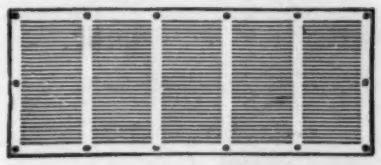

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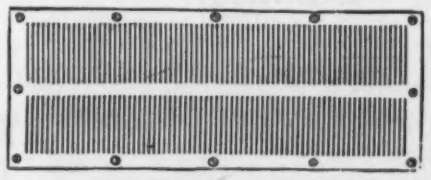
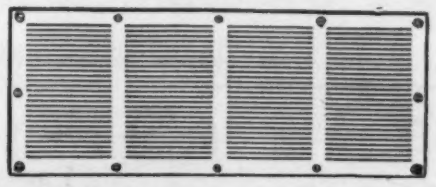
PATERSON, N. J.





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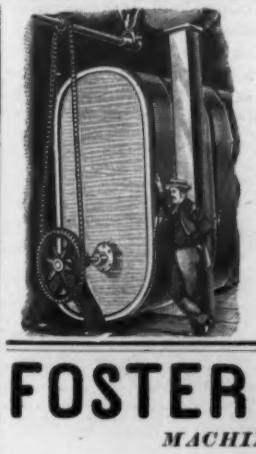

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Fits into a narrow space and requires but little power to operate.

It has a double agitating motion, moving the stuff in different directions, which prevents "floating."

It empties itself clean; no waste of stuff and protects from dirt.

Quantity of stuff in chest always shown by indicator.

In writing give space in height, length and breadth if pressed for room; also the amount of stock in dry paper that the chest is wanted to hold.

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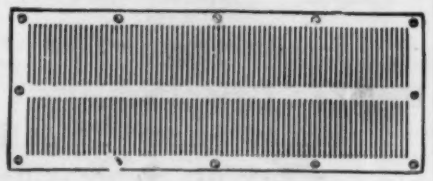

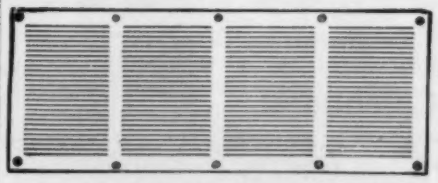

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AT PRICES THAT CANNOT BE SURPASSED.

BEST STOCK USED.

Write for Prices and Gauges.

All Work Warranted.

FOSTER & BROWN, SACCARAPPA, MAINE.

MACHINISTS AND IRON FOUNDERS.

SPECIALTIES:

Improved Paper-Coating Machines; Hanging Machines and Power Reels for Coated Paper; the Merrill-Foster Noiseless Pulp Screens; Paper Slitting and Trimming Machines; Hardened and Ground Slitters; Automatic Elevators.

BUILT UNDER OUR OWN SUPERVISION.

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Absolutely no leakage from any source; no dripping or sweating; fire-proof; ventilating.

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Are running forty-four (44) of the best paper machines in this country and in Europe, transmitting from 20 to 40 horse power each. Thousands of small Cones, hanging and standing, in operation, driving all kinds of machinery. Send for Catalogue "G."

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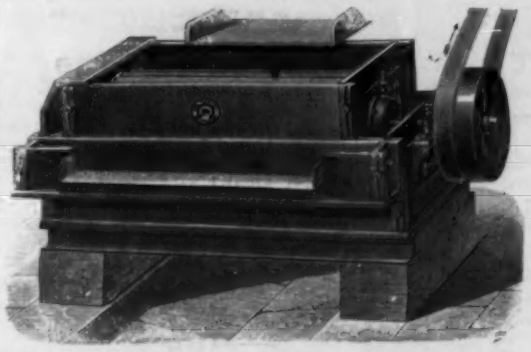
PATENTED IN THE UNITED STATES AND CANADA.



And Now Used in the Following Mills:

33	Pulp	Mills	in	Germany,
9	"	"	"	Austria,
5	"	"	"	Switzerland,
7	"	"	"	France,
1	"	"	"	Italy,
1	"	"	"	Spain,
2	"	"	"	England,
13	"	"	"	Norway and Sweden,
3	"	"	"	Denmark,
1	"	"	"	Finland,
6	"	"	"	Russia.

ADVANTAGES: Largest straining surface, combined with small requirement of room. Unsurpassed straining capacity. Absolutely reliable and noiseless work. No contact of the pulp with iron parts. Practical construction. Simple, durable, perfect. Price very moderate.

THE "WANDEL" ROTARY SULPHITE PULP STRAINER

Is the only system now adopted by the most important Sulphite Fibre Mills of Europe

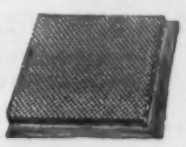
FOR FURTHER PARTICULARS APPLY TO

CHR. WANDEL, Reutlingen, Germany,

—OR—

GEO. HAMILTON, No. 74 WALL STREET, NEW YORK.

SAMPLES AND QUOTATIONS FURNISHED UPON APPLICATION.



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Asbestos Prepared Roofings.

(Specially adapted to Paper Mills).

Chicago, Ill. **H. F. WATSON COMPANY,** Erie, Pa.

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THE MORRISON & HERRON IMPROVED PAPER TESTING MACHINES.

Three Different Machines

—FOR—

Strength, Thickness and Weight

A NEW PRINCIPLE APPLIED IN TESTING PAPER.

Thickness shown to the sixteen-thousandth part of an inch.

Used in the GOVERNMENT PRINTING OFFICE and the DEPARTMENTS at Washington.

Price, complete,	$150.00
Or Strength Indicator,	75.00
Thickness Gauge,	75.00
Paper Scale,	30.00

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CAUTION.

All persons are liable to prosecution who make buy or use Paper Testers that confine and break paper within its edges, as my Patents cover that method.

TREVOR MANUFACTURING CO., LOCKPORT, N. Y.

MANUFACTURERS OF

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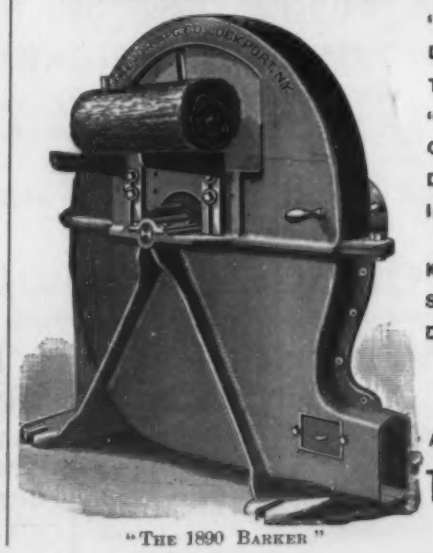

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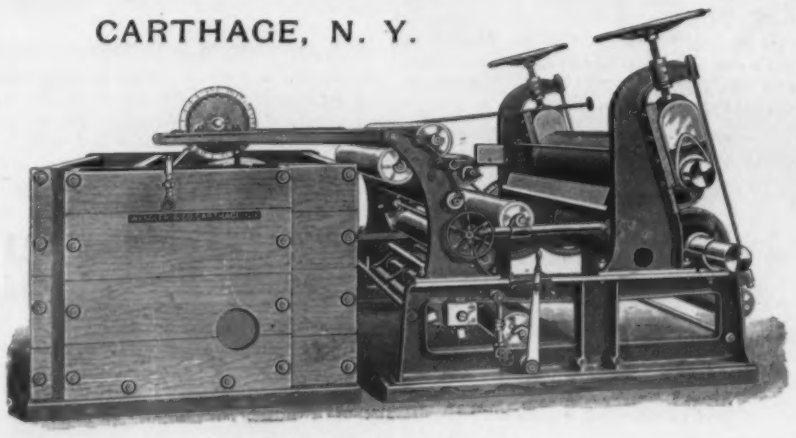

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Manufacturing News.

EASTERN STATES.

The Moosehead Pulp and Paper Company, Solon, Me., has shut down its mill.

On Saturday last the Seymour Paper Company, Windsor Locks, Conn., notified its employees that the mill would not be started up on Monday. It is expected that the shut down will last for some time.

The paper mill at North Bennington, Vt., which had been shut down has started up.

At the annual meeting of the Howland Falls Pulp Company, held at Portland, Me., the old board of directors was re-elected, A. W. Benson, of Bangor, being chosen in place of the late R. B. Dunning. The award of the insurance on the mill and contents amounts to about $135,000. The matter of rebuilding is still an open question.

An addition 40 by 60 feet is being made to the Oakland Mill, Manchester, Conn. It will be three stories high, and the upper two stories will be used for preparing stock, a filter plant of 700,000 gallons capacity being located in the lower part of the building.

MIDDLE STATES.

The Ribbon and Ticker Paper Company, Paterson, N. J., has started in the business of cutting paper for the use of ribbon manufacturers and telegraph companies. It is now cutting about 4 tons of paper daily.

The Whippany Mill, Whippany, N. J., will shut down after to-day and remain closed indefinitely.

One of the dryers in the Ancram Paper Mills exploded on June 13, shaking up things and compelling a partial suspension of work. No one was seriously injured.

The Bellport Lace and Fancy Paper Company, Bellport, N. Y., has applied to the Supreme Court for dissolution. The application is made by Trustees Francis H. Vanvechten and John Roe Smith. An order to show cause is returnable on September 29.

The Remington Paper Company, Watertown, N. Y., owns 42,000 acres of woodland in Northern New York, on the Oswegatchie River, Little River and Long Pond. Large quantities of spruce grow on the different properties and the company is assured of a good supply of pulp wood for many years to come. From Little River the logs are floated through a mill race to the nearest railway, where they are hauled out and shipped by cars to the company's mills.

WESTERN STATES.

Alexander Belford, the publisher, has been made defendant in a bill for a receiver and an accounting, filed in the Circuit Court by the First National Bank, of Miamisburg, Ohio. The defendant's notes given for paper bought of the Friend Paper Company, who indorsed them to the complainant, are secured by $100,000 of the stock of the Werner Printing Company, whose officers are made co-defendants.

The old paper mill on the east race at South Bend, Ind., is being refitted and will soon be ready to start up under the name of the St. Joe River Paper Mill.

The Puget Sound Pulp and Paper Company, Everett, Wash., is running on a 50 ton monthly order for paper to be shipped to Australia.

Personals.

E. T. Butterworth, of E. Butterworth & Co., Manchester, England, who has been in this country for some time, sailed for home last Saturday on the Etruria.

W. D. May, of George W. Millar & Co., who was thrown from a carriage recently, is again able to be at business, assisted by a porous plaster and a cane.

I. R. Elston has severed his connection with the Columbia Straw Paper Company, and now represents the Paper Commission Company, of Chicago, Ill.

William M. Singerly, president of the Singerly Pulp and Paper Company, has been nominated for Governor of Pennsylvania on the Democratic ticket.

In Town.

C. A. Cheney, Boston, Mass.; E. F. Daniell, Franklin, N. H.; I. V. Sutphin and William Stuart, Cincinnati, Ohio.

Luke Boyle, a New York packer of domestic stock, was this week a witness before the Lexow Committee, which is now engaged in investigating the New York police. Mr. Boyle testified that he had not paid any money for using the sidewalk in front of his place. He had frequently received notices to appear before the Bureau of Incumbrances for violation of the sidewalk ordinance. When he went to the office of the bureau, a man whom he had known since he was a boy told him to go home and mind his business. He could not remember the man's name.

Obituary.

HENRY JACKSON ROBERTS.

On Friday, 22d inst., Henry Jackson Roberts died at his home in Connecticut of a complication of diseases. He was born on April 21, 1839, at Waltham, Mass. His parents were Stephen and Permelia (Underwood) Roberts. The father was of Welsh extraction, although he too was a native of the United States. Among the first settlers of the town of Weston in Middlesex county, Mass., was the Underwood family, from which the mother of Henry J. Roberts descended. Her son's education began in the common schools of that district. It was completed at Lawrence Academy in Groton, Mass. Until his father's death, which occurred in the year 1865, he was employed in the manufacture of paper at Shirley, Mass. Afterward he worked for a few months as a journeyman paper maker in other New England mills, but in 1866 became manager of Hanmer & Forbs' mill at Burnside, Conn. Six years later Mr. Roberts accepted the position of superintendent of Wilkinson Brothers & Co.'s mills at Birmingham, Conn.

HENRY J. ROBERTS.

In 1882 Henry J. Roberts built a paper mill at Birmingham, and operated it continuously until the past season on manilla tissue. Lately he met with business reverses. From 1884 to 1890 he acted as superintendent of the Warren Manufacturing Company at its paper mill near Riegelsville, N. J. He also managed a farm of 200 acres; his private property at Huntington, Fairfield County, Conn., and kept it in a high state of cultivation. He never held any public office, but was occasionally solicited to accept local nomination. On September 6, 1870, at East Hartford, Conn., he was married to Alice Y. Howe, of Great Barrington, Mass., who survives him, with one child—a daughter.

JOHN ADAIR.

John Adair, master machinist at the Susquehanna Paper Mills, was drowned on Monday evening, June 18, while bathing in the Susquehanna River at Glen Cove. A boy, who was with him, saw him go down, apparently seized with cramp, but was unable to render him assistance. The boy gave the alarm, and workmen from the paper mills and others dragged the river that night, and the next day dynamite was exploded in the water, but the body was was not recovered. Mr. Adair was a first-class workman, about fifty-five years of age, and leaves a widow and five children, who live in Philadelphia. He had returned on Monday afternoon from a visit to them. In his clothing was found $574 in money. The body was found on Wednesday near the paper mills, and a jury of inquisition was held by Justice J. R. Ely, acting as coroner. The jury rendered a verdict of death by accidental drowning. The body was taken in charge by his relatives and sent to Philadelphia for burial.

EGISTO P. FABBRI.

Egisto P. Fabbri died in Florence, Italy, on June 25. He was a native of Italy and began life in a shipping house in Leghorn; but when the firm of which he was a member failed he went to Paris, and then in 1854 came to America, bringing with him his wife, mother and brother, Ernesto. After a year's search for employment he was engaged as bookkeeper by John Randall & Co. At the end of seven years' service they gave him an interest in the firm. He continued in the firm of John Randall & Co., from 1861 to 1867.

He then founded the firm of Fabbri & Chauncey, in which his brother, Ernesto, had an interest. It continued to be one of the leading shipping houses until 1884, when Ernesto died. The house was well known in the paper stock trade, and for years imported Italian rags very largely.

The firm of Drexel, Morgan & Co. was founded in 1871, and Mr. Fabbri became a member of it in 1875 and was for many years one of its most prominent and influential members.

After his withdrawal from the firm of Drexel, Morgan & Co. he spent much of his time traveling in Europe. He returned to Florence and purchased a large and handsome estate on the Via Cavour, formerly the property of an Italian nobleman.

Mr. Fabbri was one who always made and retained friends in both social and business life. He was a great lover of music and was a musician himself. He was one of the original promoters of the Metropolitan Opera House.

He rendered signal services to his country when the Austrians and Russians were threatening it on all sides, and the King decorated him with the Italian Order of Commendatore.

An important question has been passed upon by Judge Patterson, of the New York Supreme Court, in a suit which recalls the check kiting and forgeries of Albert H. Smith, the junior member of the stock brokerage firm of Mills, Robeson & Smith, which resulted in the failure of that firm on November 5, 1890, and the subsequent imprisonment of Mr. Smith in State Prison. The action was brought by Mary D. Hatch and Edward D. Sanford, executors of the will of Mary D. Sanford against the Fourth National Bank, to recover about $15,000, being the value of 100 shares of stock of the Adams Express Company, which belonged to Mrs. Sanford, and which had been delivered to Mills, Robeson & Smith just before its failure in a sealed envelope for safe keeping. For these, with other securities as collateral, Smith got a loan of $20,000, which he deposited to the firm's credit in the Fourth National Bank. The case was submitted to the court upon an agreed state of facts. It was claimed that as the money deposited with the bank was the proceeds of loans secured upon property stolen by Smith, the bank was not at liberty to use the funds to wipe out an indebtedness due it by the firm, and that the money deposited with the firm should be refunded to the parties upon whose stock the loans were procured. Judge Patterson holds that the plaintiffs are not entitled to relief against the bank. The question involves the right of a bank to apply moneys to the credit of its depositor, under a special contract to the payment of an indebtedness of the depositor to it, some of the money deposited and applied having been fraudulently or feloniously procured from a third party, but received and applied by the bank, without sufficient notice and innocently on the general account of the depositor. Judge Patterson finds, after reciting a number of authorities upon the questions at issue, that the bank's right to apply the money is established. Judgment was therefore given in favor of the bank.

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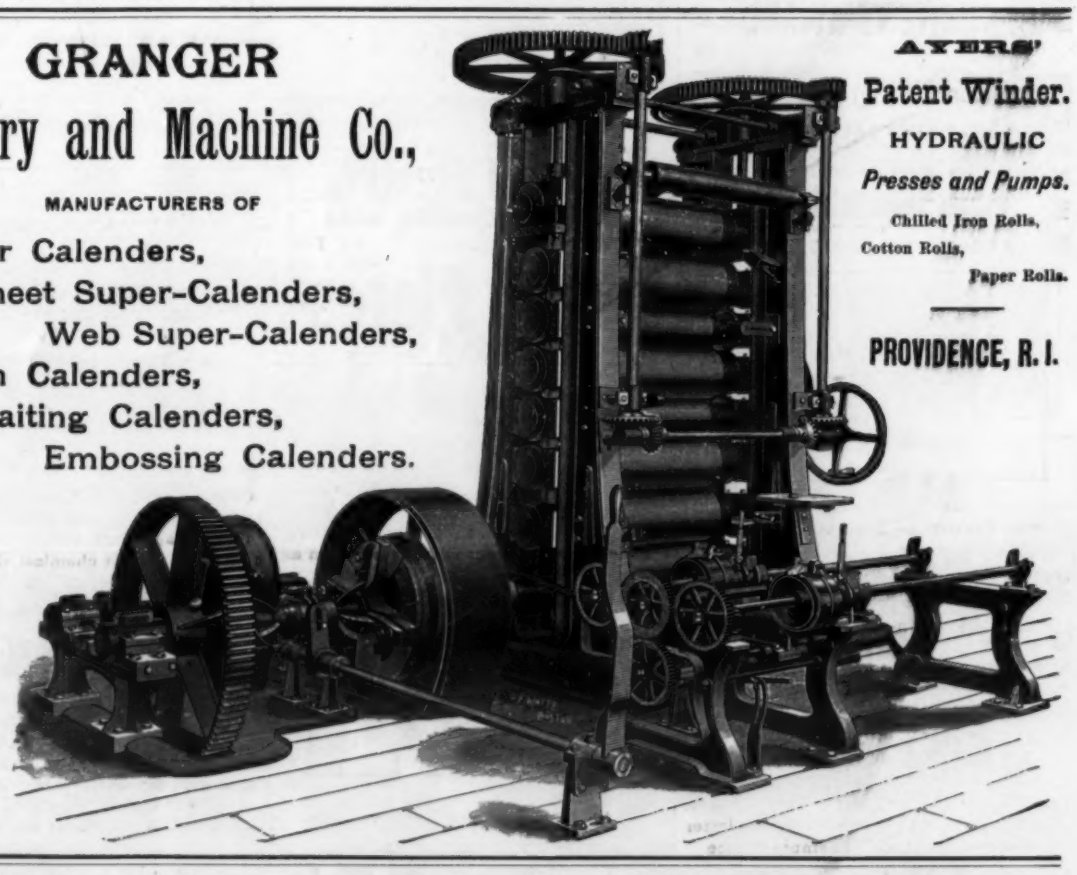

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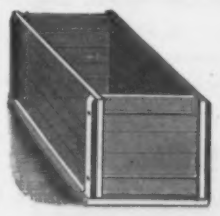

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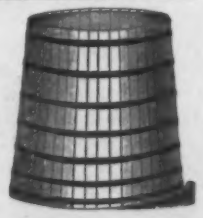


Electro-Chemistry in the Paper Mill.

Seventh Paper—More About Cells and Diaphragms.

[WRITTEN FOR THE PAPER TRADE JOURNAL.]

By James F. Hobart.

The three tank, triple fluid, syphon diaphragm electrolytic cell deserves more than passing notice. Such an apparatus is illustrated in Figure 17. There are several forms of these fluid cells, types of which are illustrated by following engravings. First, the syphon diaphragm concern (Fig. 17), then the plate diaphragm (Fig. 18), the duplex triple fluid (Fig. 19), which is really two anodes connected to a single cathodic cell, and the gravity or chemical diaphragm cell (Fig. 20). The latter seems to possess infinite possibilities and is apparently worthy of close consideration. A cell of this kind may be found described in THE JOURNAL of June 2, 1894. Illustrations of a typical duplex triple fluid cell (Fig. 19) were given in THE JOURNAL of January 13, of the three cell plate diaphragm (Fig. 18) in the issue of February 17, while the three fluid syphon diaphragm (Fig. 17) was briefly described in Paper VI. of this series, and its principle is illustrated by Fig. 12 in the issue of June 16.

Fig. 17 may be said to represent a combination of the processes described in THE JOURNAL of October 28, 1893, and February

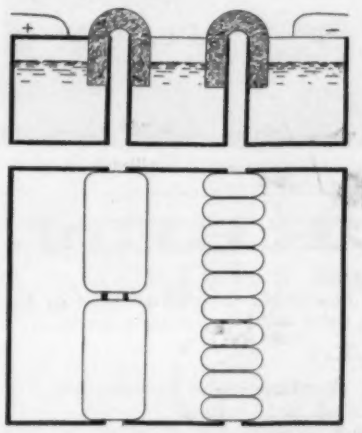


FIG. 17.—THREE TANK, TRIPLE FLUID, SYPHON DIAPHRAGM ELECTROLYTIC CELL.

17, 1894. In the elevation it is shown that the diaphragms are formed of tubes, which are filled with some porous material, so as to act by capillary conduction, asbestus porous cement, &c., being used for filling the tubes. As seen in Fig. 17, plan view, the diaphragms may either be small round tubes or they may be a large flat one, only one or two being required for each diaphragm, both kinds being shown in the engraving. The former is easily made, handled and kept in repair, but the latter has the least electrical resistance, hence it gives the best results.

The value of diaphragms of this kind is due to the ease with which they may be applied to any vessels which may be utilized for electrolytic cells; also to the fact that the cells themselves may be made to serve as anode and cathode. When a single tank or cell is fitted with one or more diaphragms measures must be taken to construct the cell of non-conducting material, otherwise a good deal of electric energy will be lost by conduction. A great disadvantage of this form of diaphragm is the distance through it, which causes a great deal of internal resistance. To obviate this fault the tubular diaphragm was evolved into the plate form, something which will be shown by Fig. 21 later on in this paper.

In using the three tank, triple fluid, syphon diaphragm electrolytic cell the liquid in the left hand tank becomes saturated with chlorine until no more of that gas will be held in solution in the water contained in that division of the cell. After the liquid has become fully saturated—become dilute hydrochloric acid, in fact—the chlorine will bubble up and pass off as fast as formed. In the cathode tank the soda deposited combines with the solution in like manner, and the solution may be drawn off when found sufficiently concentrated; but in first starting this kind of a cell to work it will be found impossible to force the current through the three cells after they have been freshly filled—the middle one with salt solution, the others with pure water. To obviate this difficulty it is necessary to put a few pounds—according to the size of the tank—of HCl into the left hand compartment; also to dissolve some soda in the other tank. This gives the water sufficient conductivity to enable the current to pass, and, once started, the current will speedily deposit enough of both elements to make the conductivity good, and the conductivity of the electrolytes will increase up to the point of saturation.

Probably the purest ions can be obtained with an electrolytic cell of this kind, or with the kind illustrated by Fig. 18. Here

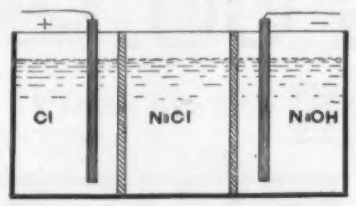


FIG. 18.—PLATE DIAPHRAGM, TRIPLE FLUID CELL.

the syphon business has been modified into a simple division, as set forth more fully in Fig. 21. In Fig. 18 a single tank contains the three fluids, which are separated by two diaphragms. Otherwise the operation of this cell is precisely like that noted above (Fig. 17).

There is another kind of three fluid cell, which I have named the "Duplex." This cell is shown by Fig. 19. It will be seen that the middle tank forms the cathode, while two anodes are used, each being in a

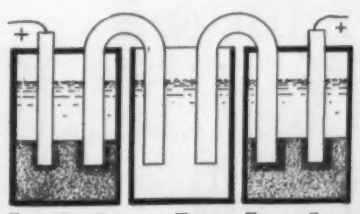


FIG. 19.—DUPLEX, TRIPLE FLUID CELL.

separate cell of its own. The syphons used in this cell are filled with a salt solution, there being no asbestus or other material inside of the syphons.

The "straining" action is secured by burying one end of each syphon in the carbon of the anode which it serves. At first sight this form of construction settles the diaphragm question, but upon studying more closely the matter grave defects are discovered. We have learned that the ions are liberated at the surface of each electrode, and that the points directly opposite each other never have less than their regular share of the work. Therefore the part of the anode which closes the tube becomes the most effective part of that terminal; hence the greater number of the ions are liberated inside of the tube, and in case of the chlorine and hydrogen rise to the highest part of each tube, where, if not drawn off by a pump, they have the effect of cutting off the electric current entirely, as soon as the tube is filled with gas at the bend.

FIG. 20.—EVOLUTION OF THE DIAPHRAGM.

It is evident from the form and nature of syphon diaphragms that they were suggested by and are a modification of the "wicking" connection between cells, as shown by Fig. 11, fifth paper (issue of June 16). Evidently the wicking was threaded through a tube to keep the former in shape and to prevent it from becoming dried up, dirty or destroyed by careless handling. It was found that the elements soon decomposed the cotton wicking, and recourse was had to asbestus or some other element not acted upon, hence the evolution of the syphon diaphragm.

In using this form of connection between two cells it did not take long for the experimenter to become acquainted with the faults of the device (and it also possesses a number of good qualities), to obviate which he shortened the long tube and connected the two tanks or cells direct, as shown at *a*, instead of running up over the top, as at *c*. The shortness of the tube proved so great an advantage that it was enlarged, as at *b*, and the next step was to further shorten the length of the tube, also to increase its area until it covered the whole side of the cell and became a mere plate or film.

No sooner was the above mentioned improvement effected than trouble began in another quarter; the big thin diaphragm, although electrically satisfactory, would not remain in place. It would buckle and go to pieces, letting the two liquids mingle with each other to the detriment of the process. All sorts of dodges have been tried for the purpose of keeping the diaphragm intact, and the success achieved has been as varied as were the methods tried.

A form of cell which works splendidly in primary battery practice seems to be that to be worked up to for electrolysis, and the connection between the primary battery cell and the electrolytic cell is not as distant as it appears, for the electrolytic cell is in itself a primary battery, and quite a good one too, as long as the elements are maintained and the circuit is closed. Send a current of electricity through in a direction opposite to that taken by the current yielded, and change is complete; the primary cell has become an electrolytic cell.

Two liquids are frequently used in primary cells, and the diaphragm there has given no end of trouble. In the gravity cell it has been dispensed with altogether, or it should be understood that a mechanical diaphragm has been dispensed with and a chemical diaphragm substituted.

A very good idea of a chemical diaphragm can be obtained by filling a tumbler or a test tube half full of water and then putting some oil on top of the water. The two liquids never mix. It is a chemical diaphragm which keeps them apart. If they are stirred up and mixed together they soon separate and quickly regain their former relative position, which is determined by the specific gravity of the two liquids. Water being the heaviest, occupies the bottom of the vessel, the oil floating on top. If some mercury is poured in it goes to the bottom, and we have two chemical diaphragms in the same vessel, with three separate liquids, neither being contaminated by the other.

This action is almost exactly what is required in an electrolytic cell where two diaphragms and three liquids are to be maintained. In the gravity cell sulphate of copper solution is one liquid and sulphate of zinc solution the other, and the copper solution, possessing the greatest specific gravity, goes to the bottom, the lighter sulphate of zinc solution floating on top.

In our electrolytic cell we want to maintain a strong soda solution, a saturated salt solution, and a solution of hydrochloric acid, so strong that it will absorb no more chlorine. Of these three solutions the latter (HCl) is the lightest, the salt and soda solutions rivaling each other, with perhaps the salt the heaviest, because its solution is always saturated, while the soda (NaHO) varies in strength, according to the stage of the electrolyzing process.

Working on this line the solutions must be separated horizontally instead of vertically, and the HCl solution being the lightest it must occupy a position above the other solutions. As it is necessary for the salt solution to lie between the others, it becomes necessary to place that solution underneath the HCl, and the NaHO underneath the NaCl; but the solutions we have to deal with (HCl, NaCl and NaHO) when superimposed upon each other, do not exhibit such perfect chemical diaphgrams as are formed between oil, water and mercury.

There is, however, quite a pronounced chemical diaphragm between the HCl and the NaCl solutions—much more than exists between the NaCl and the NaHO. It is, then, useless to depend altogether upon the natural chemical diaphragms to separate the elements, but a slight artificial or mechanical diaphragm must be used to supplement the chemical. This reasoning is correct. If we want to utilize a water power we look around for the best natural waterfall we can find in a desirable location. If we cannot find a natural dam we build an artificial one; if the natural dam is not strong or high enough we add a little artificial work to it and save money on the cost of an entirely artificial dam.

Just so with the chemical diaphragm. Even a partial one, reinforced by a light mechanical addition, will be better than an entirely mechanical construction; therefore we are justified in taking advantage of the partial chemical or natural diaphragms existing between HCl and NaCl solution; also between the latter and NaHO. According to this theory the electrolytic cell shown by Fig. 21 has been devised.

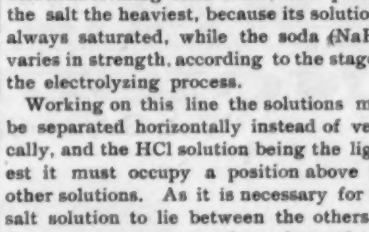


FIG. 21.—GRAVITY CHEMICAL DIAPHRAGM CELL.

In the cell, which must be built of glass, slate, or some insulating, non-corrosive material, are two light diaphragms of asbestus cloth, or some other suitable material. The upper diaphragm *d* is laid on a lattice work or grating *e*, of non-corrosive rods, and directly upon this diaphragm the anode material is laid, which may consist of lumps of carbon packed evenly all over the surface of the diaphragm. The positive wire *c* is connected to the carbon, and it will be well to use platinum wire inside of the cell and to make several connections with lumps of carbon in different parts of the cell to insure good contact between all of the pieces of carbon and the source of electricity.

The lower diaphragm *f* is laid upon a similar grating of iron, or iron rods or pipes, *h*, may be put in, and iron strips or rafters, *g*, be laid upon the rods, then iron wire netting is spread over the rafters, and the asbestus cloth is placed upon the netting. This makes a strong form of diaphragm, and the iron in its support serves as the kathode. The rafters *g* are used to provide a number of uninterrupted passages to the pipe H, which carries off the hydrogen gas which may be evolved during electrolysis. The negative electric wire is connected to the iron grating, as shown near *h*. A couple of agitators, *a*, *a*, are operated to keep the electrolyte in motion, so that gas will not adhere to the kathode and prevent electrical action through the high resistance of a layer of hydrogen—polarization it is called. The lower diaphragm is made roof-shaded, for the purpose of leading the gas to its pipe, and thus assist in getting rid of it by its own (lack of) weight.

In operation the tank, or cell, is filled with a saturated salt solution (NaCl), leaving sufficient room at the top for the chlorine to accumulate. Current then being turned on, the ions are separated, and the upper and lower solutions gradually become nearly pure, and as lettered in the engraving. If it is desired to start the process so as to secure pure ions from the beginning, it will only be necessary to fill the lower compartment with water, then fill the middle space with salt solution, and let in some water above the top diaphragm; there is no need of priming the cell with caustic soda and acid, as had to be done with the three fluid cells, Figs. 17 and 18.

The natural or chemical diaphragm tendency of the three liquids is to keep apart, and this tendency is much strengthened by the passage of current; these two forces, strengthened by the very light diaphragms, are sufficient to do all that is required in this direction. A cell built somewhat after the plan of Fig. 21 was described in the June 2 issue of THE JOURNAL. The next paper will discuss polarization and supplementary kathodes.

(To be continued.)

Tests for Belting.

R. James Abernathey in *Power* describes a simple tester for determining the adhering and transmitting qualities of belting. He says: Select a short piece of shafting, say 3 feet long, on which fit a pulley of from 16 to 24 inches in diameter and 6 inches face. Fasten the pulley securely to the shaft, as is ordinarily done for work; then fix clamp supports as substitutes for journal boxes, and hang the shaft about 4 feet above the floor at any convenient place that will be out of the way. Clamp the shaft tightly so that it cannot turn, and the tester is ready for business.

Throw a piece of 6 inch belt over the pulley and attach a tension weight to one end of it with the weight resting on the floor. To the other end, by means of a hook, hang a small platform on which all sorts, sizes and descriptions of weights can be piled. Pieces of iron of any kind can be used or lead or anything that has weight to it. With these odds and ends the platform is to be loaded until the belt slips and raises the tension weight from the floor. The platform weights can then be weighed and a record made of the weight.

The standard test should be made with a piece of new leather belt of good quality, and by its record all other belts should be measured. The bottom of the platform ought to be at least 1 foot from the floor when empty, so as to have some distance to fall through when a belt is being tested.

By this standard all other kinds of belts may be measured. If a belt requires more weight to slip on the pulley with the same tension than the standard, then it is a better power transmitter. If it slips with less weight then it is not so good. In this simple way all kinds of belts can be tested in relation to each other, and records kept for convenient reference.

General Notes.

Attachments for $14,494 have been issued against the Winter Art Lithographing Company, San Francisco, Cal.

An attachment for $358 has been issued against the Art Engraving Company, publisher of the *Art Weekly*, New York.

The bill making Labor Day, the first Monday in September, a national holiday has become a law, having been signed by President Cleveland on June 28.

An envelope, paper bag and manufacturing stationery business, offered for sale in another column, is believed to present an exceptional opportunity for parties desiring to secure a good business opening.

A scheme for a continuous water way from Hudson's Bay to the Gulf of Mexico has been brought forward by Mr. McCleary, representative to Congress from Minnesota. The plan contemplates connecting by canal the head waters of the Red River of the North and Minnesota River, through Big Stone and Traverse lakes. The Minnesota River empties into the Mississippi a little above St. Paul, and the Red River reach Hudson's Bay through Lake Winnipeg and Nelson River. The Minnesota River is not navigable for any great distance except during high water in the spring, but it could no doubt be converted into a canal by dredging and straightening. This is one of the many canal schemes by which the helpless shipper thinks he may escape a few railroad exactions. Another canal project proposes to connect the Ohio River with the Great Lakes, and yet another has a similar object in view for the Hudson.

The Excelsior Paint and Roofing Company, 155 Duane street, New York, manufactures roofing materials and sheathing papers. "Eagle Brand" roofing felt, which is one of the specialties of this house, is said to be fireproof, no tar being employed in its composition, and no gravel being used. Send for price list.

The light giving efficiency of the average incandescent lamp, as has been shown by Professor Nichols, is only 5 per cent. of the total energy radiated from the filament, the remainder being wasted as heat. The superiority of the arc lamp, he asserts, is not so great as generally supposed, and he makes the ratio two to one in favor of the arc lamp.

A movement is on foot by a number of dealers in Philadelphia, who have been forced out of business, to test the legality of the business carried on by the National Wall Paper Company. It is understood that the matter will shortly be carried to the courts. The ground upon which the action will be based is that the Trust is violating the Federal Anti-Trust law.

A permanent organization, to be known as the Lake Line Association, was recently formed at Buffalo, N. Y., the object of which is to secure and maintain reasonable transportation rates for lake and rail traffic, and to prevent unjust discrimination in charges. It is believed that such an association will do much toward bettering the condition of lake and rail traffic.

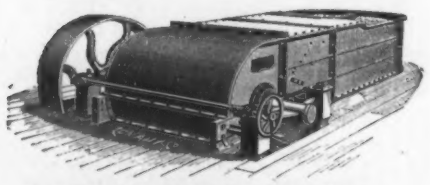
The American Sulphite Pulp Company, Boston, brought suit against the New England Sulphite Digester Company (Curtis & Jones' artificial stone linings), Boston. Evidence was taken this week before an "examiner" in Boston, and will be submitted to the court for decision. A. D. Little was an expert for the New England Sulphite Digester Company. Decision is awaited with interest.

A machine of great power and of superior adaptation in metallic industries of a special class is mentioned in a London paper, its use enabling the manufacturer of connecting rods, crank webs, pump levers, tall end nuts, eccentric rods, crossheads, &c., to cut and fashion the same direct from cold iron or steel. The machine in question is made in sizes varying from 8 to 30 inches in thickness, the feeds and speeds for these different thicknesses being regulated to the most perfect nicety.

O. P. Stoddard has sued W. A. Fowler, of the late firm of W. A. Fowler & Co., paper dealers, Chicago, for $10,000 damages. In January, 1893, Fowler is said to have approached Stoddard and asked him to invest in $10,000 worth of the stock of the company. In his negotiations Fowler represented that the $60,000 capital stock of the company was all paid up. A statement prepared by President Fowler showed that the stock on hand was worth $39,586.96, the accounts $21,010.43, the bills receivable $8,213.77, cash on hand $1,397.70, and the good will of the business $25,686.73; that the sales amounted to $30,000 a month, and the profits $36,000 a year. Stoddard invested $10,000 on this showing, and thought that he had a good thing. He soon learned, the declaration says, that the assets of the concern amounted to only $45,000, and the liabilities to $49,035.19, and that it was in fact totally insolvent when Stoddard invested.

Richard Worthington, of the Worthington Publishing Company, New York, was arrested on Thursday by the sheriff, on a charge of misappropriating $19,000 of the funds of his firm. The order of arrest was issued by Supreme Court Justice Barrett, in the suit of J. J. Little, receiver of the Worthington Company, to recover the sum named. The company has been in the hands of a receiver since January, 1893. Its liabilities were about $132,000. Worthington was manager of the business and handled all the money. To Receiver Little's affidavit is attached a copy of the cash book of the company, according to which Worthington drew upon the company's funds to pay his house rent, pew rent and household expenses. The itemized payments included contributions to churches. A considerable amount of money was paid as premiums on life insurance policies which aggregate $40,000. There are numerous other items, including lots purchased at Sea Cliff, L. I., where the Worthingtons have a summer home. Mr. Worthington's bail was fixed at $5,000.

THE J. H. HORNE & SONS CO., LAWRENCE, MASS.



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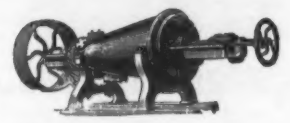

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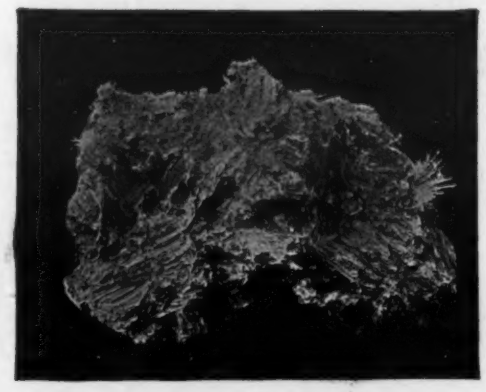

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NEW JERSEY—Sparks Manufacturing Co., 1.

MASSACHUSETTS—Chas. Callender, Glendale, 2; Merrimac Paper Co., Lawrence, 2; Connecticut River Paper Co., Holyoke, 1; Carew Manufacturing Co., South Hadley Falls, 1; Rice, Barton & Fales, Worcester, 3, two orders; Eaton, Dikeman & Co., Lee, 1; Bacon Paper Co., Lawrence, 1.

VERMONT—Fall Mountain Paper Co., Bellows Falls, 5 orders; Wyman, Flint & Sons, Bellows Falls, 2; National Metal Edge Box Co., Readsboro, 1.

NEW HAMPSHIRE—Glen Manufacturing Co., Berlin Falls, 3; Sugar River Paper Co., Claremont, 1; Wilder & Co., Ashland, 1.

MAINE—Umbagog Pulp Co., Livermore Falls, 2; Bangor Paper Co., Orono, 4; Jay Paper Co., Jay, 1; Rumford Falls Paper Co., Rumford Falls, 20; Hollingsworth & Whitney, Gardiner, 1.

CONNECTICUT—White & Wells, Waterbury, 1.

VIRGINIA—Columbia Paper Co., Buena Vista, 2.

INDIANA—Anderson Paper Co., Anderson, 3.

WISCONSIN—Kaukauna Paper Co., Kaukauna, 1,

MINNESOTA—St. Cloud Paper Co., St. Cloud, 1.

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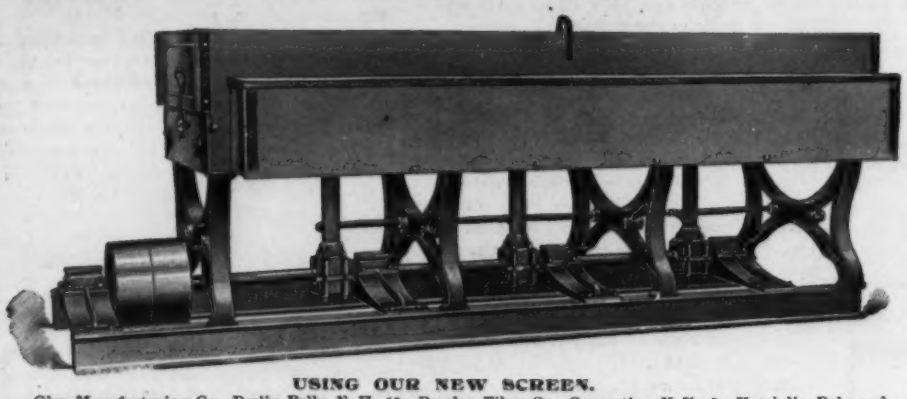

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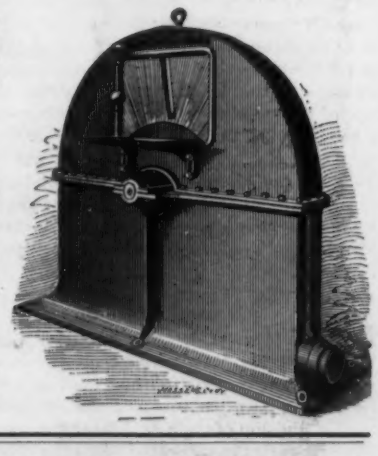

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As years passed it became *the* standard work, and for the past decade copies have sold at large prices, often as high as $30 each, and occasionally for more money. The original book consisted of 422 pages, 8¼ by 11 inches in size.

Mr. Hofmann returned to Germany more than eighteen years ago and settled in Berlin. He established *The Papier Zeitung*, and in due course, about seven years ago, began to write his second and latest Treatise. Thus far he has printed and published probably 1,200 pages in German, and in parts of forty-eight pages, including cover, profusely illustrated by wood cuts. When finished the book will consist of about 1,600 pages (pages size same as in first book), illustrated by 1,500 wood cuts.

We have contracted to translate and publish the work in English in twenty parts, of about eighty pages each, at intervals of not less than sixty days, and at a cost of *one dollar cash, in advance, for each and every part.* When the enterprise is completed the twenty parts will sell, *unbound*, for *twenty dollars.* The binding will be extra. Subscribers can themselves have the parts bound, or have us bind them at extra expense; but it should be noted that no money will be saved by waiting until THE TREATISE is completed and bound.

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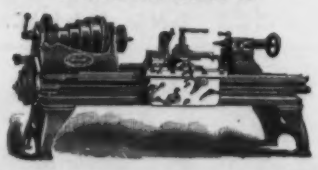

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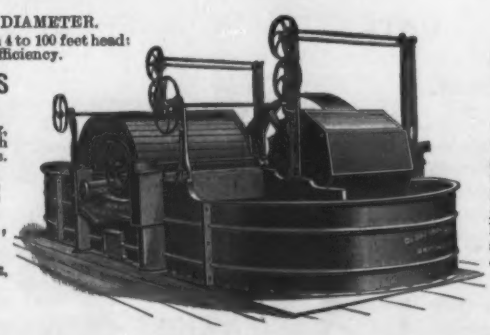

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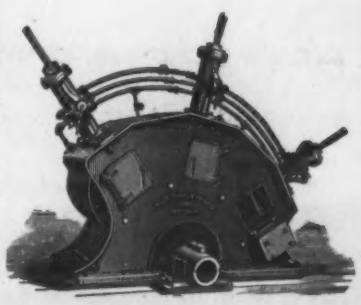

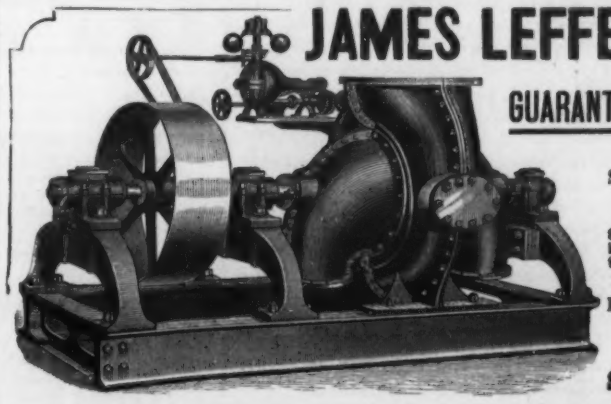

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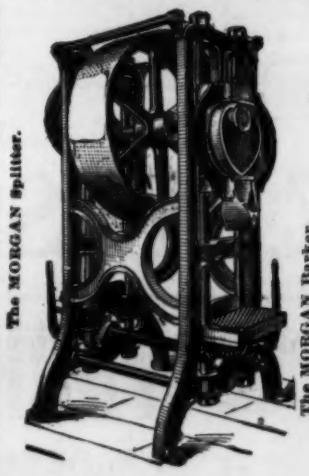
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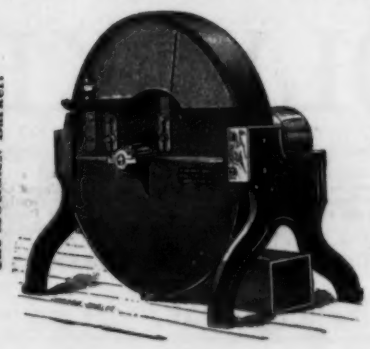
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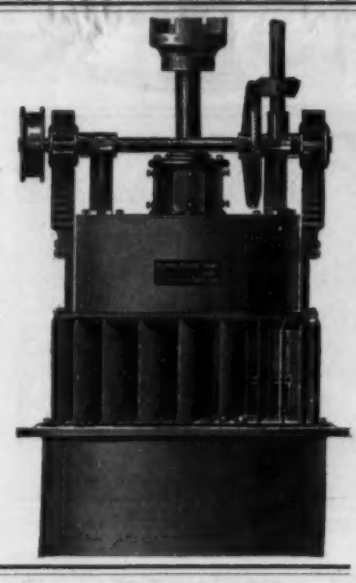

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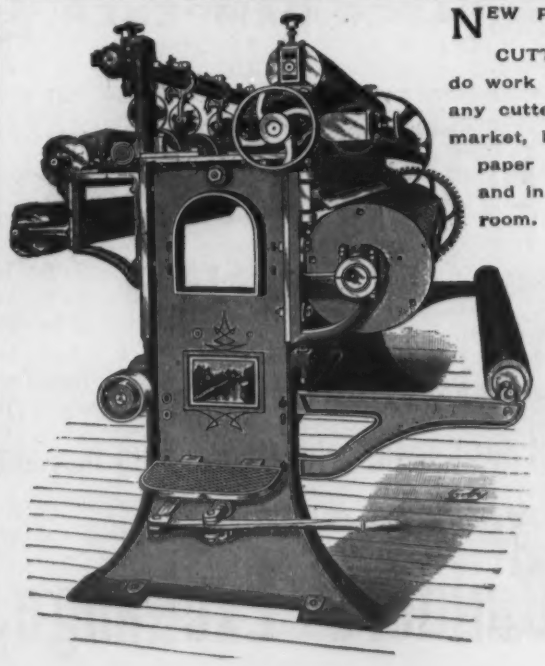

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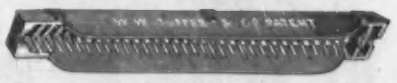

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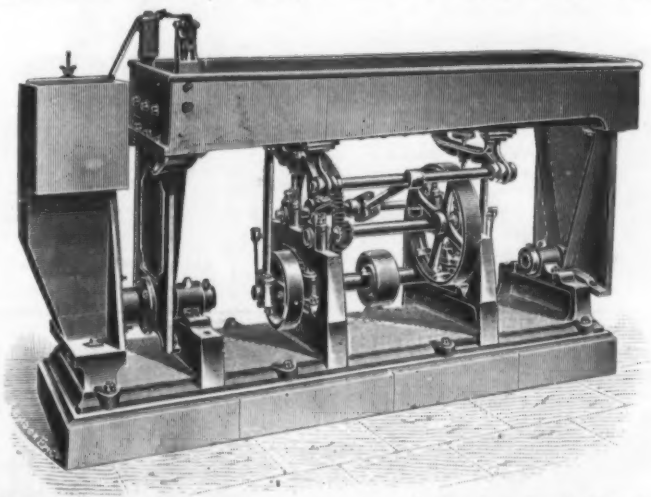
" INVERESK PAPER Co., . . Musselburgh, Midlothian
" THE NORTH EASTERN PAPER MILLS Co., Ltd, Newcastle
" OLIVE BROS., Ltd., ... Bury, Lancashire
" POTTER & Co., ... Darwen, Lancashire
" JAMES STEWART & Co., ... Westfield, Bathgate
" THE ST. NEOTS PAPER MILL Co., Ltd., . . St. Neots
" W A. SOMMERVILLE & Co., . . . Kevock, Lasswade
" THOMAS & GREEN, Ltd., ... Wooburn, Berks
" W. TOD, JR., & Co., ... Springfield, Midlothian
" W. TOD & SON, ... Lasswade, Midlothian
" JOS. TOWN & SONS, ... Keighley, Yorkshire
" JAMES WRIGLEY & SON, Ltd., . . . Bury, Lancashire

TESTIMONIALS.

Messrs. ANNANDALE & SON, Ltd., Polton Paper Works, Midlothian, write as follows:

"We may say that we consider the Oscillating Strainer embraces all the advantages of the revolvers, with none of its disadvantages, and all the advantages of the flat bottomed, with none of its disadvantages, while it also holds qualifications essentially its own. As we had your Strainer taking through 500 lbs. per hour of **pure rag pulp** of ordinary length through 3½ cut, we think it says sufficient for its power."



WE have pleasure in calling the attention of American Paper Manufacturers to the new design of Screen as illustrated above. This Screen has now been thoroughly tested on all classes of pulp, and we confidently recommend it as the best and most efficient Screen at present in the market.

A slow, oscillating motion, about twelve oscillations per minute, is imparted to the vat by a crank, and the diaphragm is driven from a crankshaft which runs at about 550 revolutions per minute, and the amount of stroke is regulated by adjustable pins.

The entire straining surface is constantly in motion, the stuff washes across the plates at each oscillation, thus effectually preventing the pulp from settling on the plates. The refused fibres are carried into channels at each side of vat and discharged by a simple arrangement of automatic plunger valves.

Our standard make of Screen has a straining surface of 7 ft. × 2 ft., and at a mill here making high class printings a Screen of this size, with plates having slits 9-1000 wide, is passing 1,000 lbs. of dry paper per hour. In mills using pure rag stuffs the Screen under above conditions is regularly passing over 600 lbs. of dry paper per hour.

All impurities are removed and a great saving is effected in the consequent cleanliness of the paper. The Screen is absolutely noiseless, the power required is nominal, and the wear and tear is reduced to a minimum.

TESTIMONIALS.

Messrs. JOSEPH TOWN & SONS, Turkey Paper Mills, Keighley, write:

"We have pleasure in saying we think your Patent Oscillating Strainer is beyond doubt the best yet produced. We have made decidedly cleaner paper with it through the same cut of plates, and as it automatically removes the dirt and knots strained out of the pulp **as they are made**, it is always practically fresh and clean for its work. Its working parts, too, are so simple as to preclude any trouble from its own working, which cannot always be said of any other Strainer. We are perfectly satisfied with it, and can most cordially recommend it."

Messrs. R. & J. COUPER, Millholm Paper Mills, Glasgow, write:

"We have now had your Oscillating Strainers making all qualities and weights of **tub sized rag papers**, and are well satified with the results. We consider them a decided improvement over both flat and revolving strainers of the latest modern paper making practice. They are in our opinion giving a cleaner result all round, and effecting at the same time a considerable saving in fibre, which, with proper machine house supervision, ought to recoup original outlay in a comparatively short period."

Messrs. THE CULTER MILLS PAPER Co., Ltd., Aberdeen, write:

"We are pleased to tell you that your Patent Flat Oscillating Strainers, which are fitted to one of our paper machines, continue to give us every satisfaction. In our opinion this Strainer contains many improvements, passes a large quantity for the plate area, and effectually keeps back all impurities. We are able to pass through our Strainer of 7 ft. × 2 ft. **fully 500 lbs. per hour.**"

Messrs. W. A. SOMMERVILLE & Co., Kevock Paper Mills, Lasswade, write:

"Your Oscillating Strainer has been working on our Presse Pâte for more than a year, and is passing over 50 tons of esparto grass per week. The cut of the plate is 4½ (Watson's gauge). We have never had the slightest trouble with it since we started, nor have we spent a penny on its upkeep. The two additional Oscillating Strainers lately supplied to replace the revolvers on our paper making machine are also giving most satisfactory results, and we consider your Strainer is far and away **the most efficient Strainer we have ever worked.** By the oscillating motion the plates are kept quite free from dirt and stuff, and on this account the power to drive is reduced to a minimum."

Messrs JAMES STEWART & Co., Westfield Paper Mills, Bathgate, write:

"The Oscillating Strainer which you lately supplied us with is giving every satisfaction, and our manager reports that 96 cwt. bleached esparto can with ease be passed through in twelve hours. We shall have great pleasure in recommending the Strainer to anyone who may think of going in for a similar machine."

FOR FULL PARTICULARS APPLY TO

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65,000,000 GALLONS OF WATER A DAY

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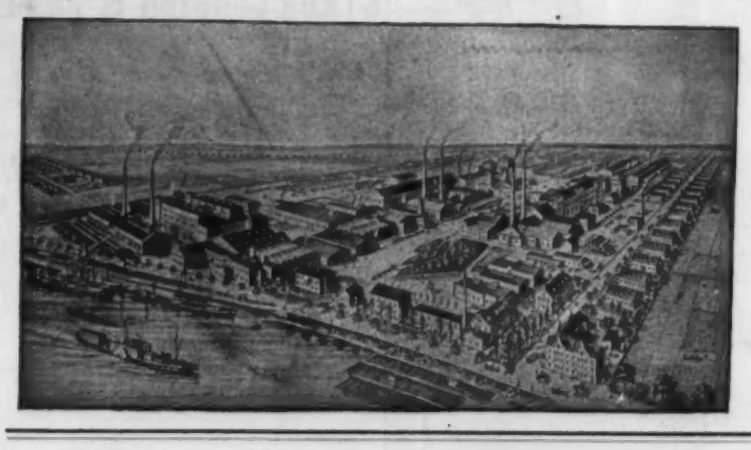

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Dry, Unbleached and Bleached,

OF ALWAYS EVEN QUALITY.

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The Paper Mill on the San Rafael.

The progress which Mexico is making in manufactures is really wonderful. The stimulus afforded by the high rate of exchange has developed in the native capitalists an astounding amount of energy and commercial enterprise, and has at the same time induced many American capitalists to invest here in various ways, and very often in conjunction with the millionaires of Mexico. In curious nooks and corners the observant tourist will notice the tall chimneys of factories, and very often these are located in regions most interesting to the lovers of nature. The time will come when the example set by the splendid factories of San Rafael and Miraflores will induce men of means to explore more thoroughly the slopes that lie at the foot of the Iztaccihuatl and Popocatepetl for factory sites and perhaps for water power, and this will result in a network of tramways about the the mountain chain that culminates in those magnificent peaks.

Here will come the opportunity of the Interoceanic Railway, for that line girdles the range most completely, and all the tramways now existing and to be built will connect with it and be its feeders.

No visitor to Mexico fully appreciates the grandeur and sublimity of Iztaccihautl and Popocatepetl until he has been to Miraflores or to San Rafael. Anyone can now arrange a superb round trip for himself by buying a ticket from Mexico to Amecumecu and return, and then taking the tramway from Amecumecu to El Crucero, where it unites with the Interoceanic at the station of La Compania. By doing this he loses the benefit of his ticket between Amecumecu and the latter point, but the difference between a single and a return ticket more than compensates him, if he requires compensation. But if he be a man of any soul he will not, for the tramway excursion will open up to him a new world of thought and feeling, and will give him an experience so fascinating that he will be always hankering to renew it. He will be fairly in the mountain land; he will see the glorious snow covered peaks in new aspects that will vary with the curves of the tramway and will thrill him with mingled awe and ecstasy. They are no longer glittering generalities whose details escape observation. Their snows are plainly snow, and one notes the great ribs of rock beneath the white covering. All the configuration of these mountain giants is plainly to be marked.

If the traveler has the luck to bear a letter of introduction from Señor Sanchez Ramos, the head of the company that manufactures paper at San Rafael, he will be received with open arms by the engineer and manager, Señor Alberto Woern, and will be the object of the most delightful hospitality in a most fascinating region, under the shadow of royal cedars, mingled with pitch pine and spruce. If he is of an engineering mind and questions his entertainer adroitly he will be rewarded, for Señor Woern will tell him the past and the present of San Rafael in a way that will interest him beyond measure.

Away back in the forties a Mexican gentleman of German parentage named Drusina was so far ahead of his time that he conceived the idea of utilizing a splendid cascade with a fall of 500 feet for the manufacture of charcoal hammered iron. The cascade came from the glacier of Iztaccihuatl, and flowed in the dry season as well as in the rainy. Around the little plateau that received the foaming waters of the cascade were slopes covered with trees that could be easily converted into charcoal. The waterfall gave the power necessary for the trip hammer and for the huge bellows of the hearths. Ore alone was wanting. But Señor Drusina had convinced himself by observation that there was a probability of finding sufficient iron of the lean kind upon the upper slopes of Iztaccihuatl, and being a man of means he went ahead and established himself under the shadow of the spreading cedars.

Meanwhile iron was brought to the forges from the tropical zone, near the coast, on the backs of burros, and was converted into rods and bars of excellent quality, which went to Mexico City also on burros' backs. When this shrewd Mexicanized German, after a prolonged trial, had become certain that iron of any kind was not to be found in sufficient quantities anywhere upon the flanks of the mountain, he contrived to part with the property to the Rothschilds through the agency which they then had in Mexico. When it became theirs they launched out into royal expenditure, believing that with money the water power could be made to pay. They cut a splendid road to Tlalmanalco and made a most thorough search for iron in the mountain. Finally they grew tired of spending dollars for the receipt of dimes and sold the property for a mere song, after an expenditure of more than a million. Then the water power passed from hand to hand, as a something that might be made very useful if a man could only hit upon the method of utilizing it.

At last it fell to Señor Sanchez Ramos, who saw something more in the water than a mere power. It was chemically pure, containing neither lime nor any other substance, and it flashed upon his quick intuition and pregnant intellect that this was just what was needed for paper making. He associated with himself Thomas Branniff, whose name is well known in connection with more than one great industrial enterprise in Mexico, and then went to Europe for an engineer who could create a paper factory in that wilderness of spruce and cedar. In Switzerland he found the very man he was looking for in Albert Woern, a German engineer, who had been largely identified with Swiss water power factories, and especially paper factories.

This was in 1889. To-day, less than five years from the time when Albert Woern paid a preliminary visit to Mexico and to the famous cascade, the factory has been created, and has made for itself by the superiority of its paper and the cheapness of production a market that is continually expanding beyond the power of the mills to keep up with its demands. Already Albert Woern has completed his plans for doubling the output, and by the time he has put them into operation the demand will have caught up to him.

Patriotic men in Mexico feel the utmost pride in the success of the factory of San Rafael. The great work of Dr. Antonio Penafiel upon the antiquities of Mexico was printed at Government expense upon a beautiful ivory tinted paper made there.

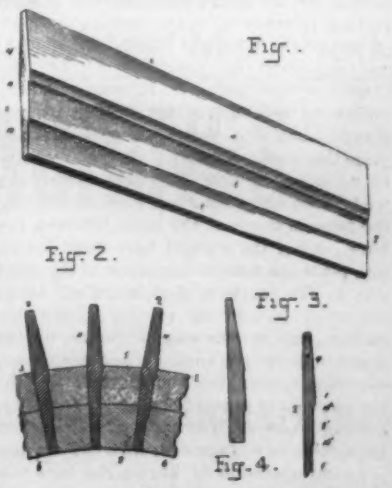
The traveler may, if he so elects, after leaving the charming scenes of San Rafael, make a short stay at Tlalmanalco, a quaint little mountain town about half way between San Rafael and the point of junction with the Interoceanic line at La Compañía. There are some ruins here, which Mexican gentlemen assured me were anterior to the Spanish conquest, but I confess I could not find them. I did find, however, ruins of a Franciscan convent, which I suppose may date from the beginning of the seventeenth century. It is singular that all the best specimens of Spanish architecture are outside of the capital, and the ruins here are no exception to the rule, which seems invariable. The cascade of San Rafael after escaping from the nineteen turbine wheels joins the river of San Rafael not far from here. At this point the stream is most picturesque, flowing in a somewhat steep barranca, and brawling among the many boulders in its bed. It looks like an ideal trout stream, but alas! there are no trout in it. Perhaps it would be possible to hatch trout eggs if some philanthropic pisciculturist of the California commission would take the trouble to send them.

From Tlalmanalco early in the morning the tourist gets the finest possible views of the two mountains. Popocatepetl receives the full rays of the rising sun, and his immense cone, covered with deep snow, is like a huge dome of burnished gold. What is strangest is that one gets a correct impression of the colossal mass confronting the eyes, which is a thing that rarely happens. The "volcan," as this mountain is always called by Mexicans of Mexico City, although he has not been known to emit any smoke from the time of the Culwas, is only a little short of 18,000 feet, and is therefore the third mountain in North America. At Tlalmanalco the "White Woman," or Iztaccihuati, affords a splendid contrast in the early morning to the volcan, for not a single ray of the sun illumines the slope that the spectator sees. All is in the deepest shadow, some of the tones being absolutely indigo. The great extent of the slope almost takes away one's breath, for the "White Woman" seems herself like an actual chain of mountains rather than a single peak. The crest is broken into two end peaks and one central mass, like the great keep or donjon tower of a Norman fortification. This is all in snow, and the white mantle stretches far below, and lies like silver ribbons, in deep ravines among the trees in the lower part of the upper slopes.

From this point there is a wonderful series of crossing lines of secondary ranges and foothills, and in every one the serrated crest comes out black and sharp in outline, while beneath the crest everything is veiled in a haze between silvery and light blue. Then between the spectator and the lowest slope is a grand stretch of fertile land spreading without a break to the Lake of Chalco. In the upper part of this stretch there is no need of irrigation, but below the hacienda of La Compañía is gridironed with ditches carrying water from the San Rafael River. In this garden spot of Mexico crops never fail, and there is consequently a degree of prosperity which the Northern parts of the Republic can never know. It is a great region for orchards of olive trees and figs, and I thought I saw around the village of Ayolta some mulberry trees, but it is possible that I was mistaken.—*Edward Garczynski in San Francisco Chronicle.*

Roll Bar For Pulp Engines.

This invention relates to rolls employed in paper pulp engines, and pertains especially to the construction of the bars, which form the periphery of the roll and



ROLL BAR.

which are employed in reducing the stock, upon which they operate to such a consistency as will permit it to be converted into a paper web or sheet.

Figure 1 is a perspective view of a roll bar embodying the invention; Fig. 2 is a cross section of a roll in part, with a number of bars in position. Fig. 3 is a cross section of a single beveled bar. Fig. 4 is a modified form of bar.

The object is to produce a roll bar of such form that after the wooden filling or wedges are driven home positive engagement shall occur between the bar and the wedge, in

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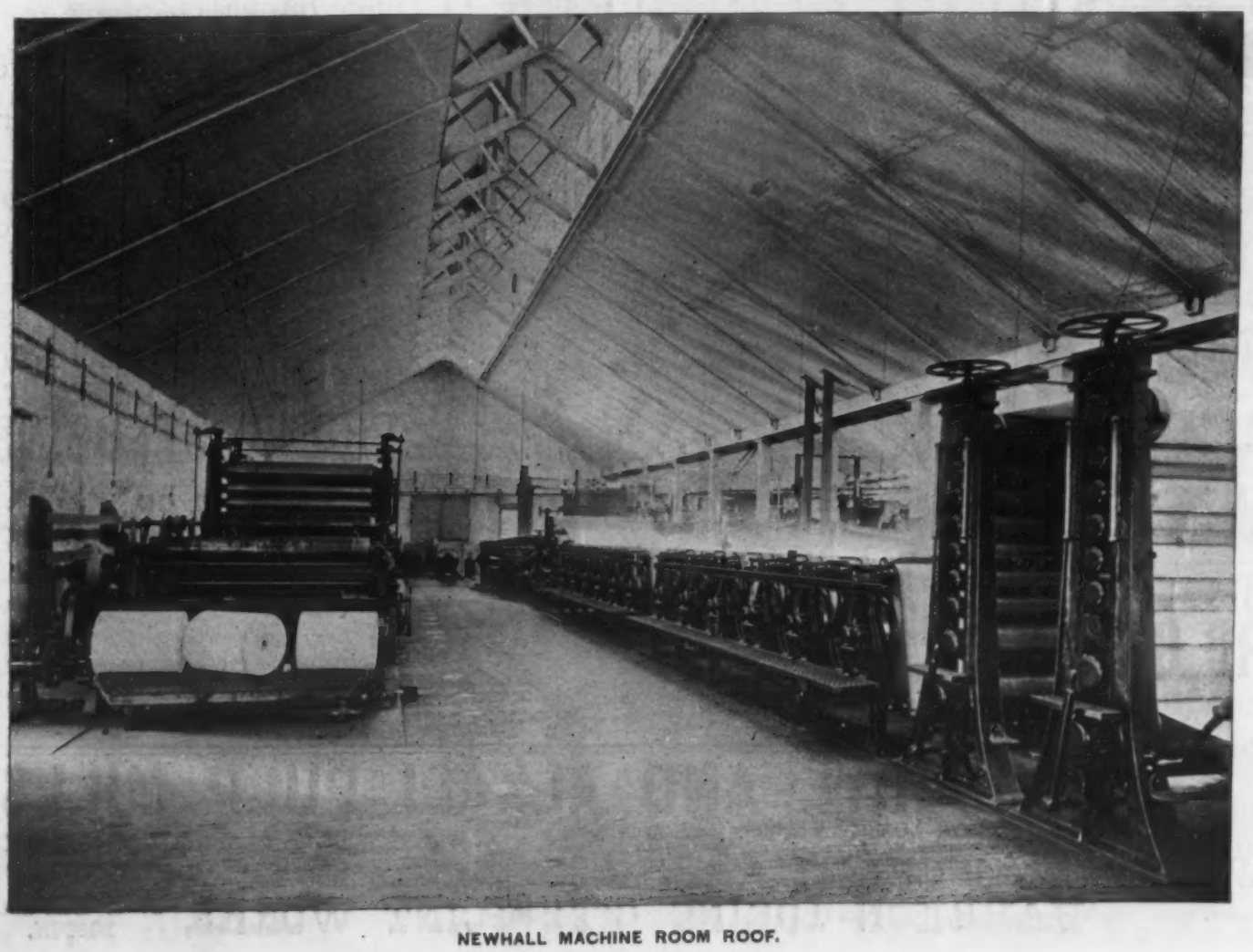

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order to prevent the wedges from starting from their places under any ordinary shocks or blows which may occur when the roll is in use. To this end a roll bar is shown at 2, as made from steel, which is to be manufactured in strips and then cut into suitable lengths. This bar, as shown in cross section, has its thickest part preferably to one side of the longitudinal centre, and is formed with a double bevel; the lower or longer beveled surface 3 being inserted in the roll, the upper and shorter surface 4 projecting beyond the roll proper and serving to act as the cutting edge. Between the blades are inserted strips or wedges of wood adapted to extend longitudinally of the blades. The upper series are indicated at 5, the lower series at 6. In order to prevent these wedges from becoming loose, there is formed upon one side of the bar, or that part contiguous to the wedges, a step surface, 7. This surface is made up in the present instance of portions 8, 9, located in different planes, and separated by shoulders 10, 10', the height of the shoulder representing the difference in the position of the planes. Hence when the wedges are driven into place the woody fibres will yield sufficiently to admit of a snug fit being made, the wedges being given a taper approximating the general shape of the space between the bars. After the wedges have been driven into place the natural expansion of the wood due to the presence of moisture will cause the wood to conform exactly to the step surface, and in this way fill compactly the space between the bars. When this expansion has occurred the shoulders 10, 10' then act as stops to prevent the wedges from becoming loose or drawing out, as the bars have positive engagement with the wedges.

In the operation of keying the bars into the roll, the bars are arranged as shown in Fig. 2, that is, in this particular instance, only one-half of the lower side portion of each bar is provided with a step surface, hence the next adjacent bar is positioned with the smooth lower side portion opposite the step surface of the other bar, since it has been found in practice that a step surface on one bar is sufficient to hold the wedges between any two bars firmly in place. The bars are to be secured to the roll in any suitable manner now practiced, preferably, however, hoops (not shown) are shrunk on the ends of the roll, while slots are cut in the extremities of the bars. Thus by causing the bars to engage the hoops the bars are fastened strongly to the roll and are then wedged in as described.

Fig. 3 shows a single bevel bar 2', one side being a continuous plane surface, the upper beveled surface being indicated at 4', while the lower beveled surface is formed with a step portion, 7'. In some instances, as shown in Fig. 4, the lower body of the bar, or that portion which is embedded in the roll, in contradistinction to the projecting part or cutting portion, has no taper, but is of rectangular shape in cross section, the step portion being raised upon it. In this particular class of bar it is found much more difficult to retain the wood filling, as the angle between the diverging side faces of adjacent bars is much sharper.

How to Renovate Files.

Place twenty or thirty useless files in a solution of 1 pound of soda dissolved in warm water sufficient to cover the files; if they are not rusty thirty minutes will suffice; then brush them well with a hard brush to remove all dirt; it will then be wise to submit each file to a wire brushing before placing in the bath. When the files are thus cleansed prepare a wooden vessel capable of containing them, if possible placing them edgeways, leaving a slight space between them; then pour in sufficient water to barely cover them, and add to the water a quarter of its bulk of nitric acid in solution. The files must remain fifteen minutes for fine files and thirty minutes for rough ones. The wooden vessel must be kept at a slow, regular rocking motion, so that the liquor is constantly scouring the files, and should they be laid flat they must be turned over every three or four minutes. After they have been in the solution the required time move them to a pail of cold water and scrub them well with a brush; then replace them in the solution, adding half the previous quantity of nitric acid, and pouring it on the shanks, not on the files. Keep the vessel in motion, as before, for fifteen or thirty minutes, according to sort of files; then take them out and wash them again with cold water.

For finishing process add to the solution in wooden vessel about 12 per cent. sulphuric acid; wait till the fumes have subsided a little, then replace the files and continue the rocking motion about one minute for fine and three minutes for rough ones, then remove them to cold water. Take care to brush away the acid and then lay the files to dry before a fire. While still warm rub them with oil, and the files are then fit for use. A new file can undergo two such operations. It may then be recut or turned into a screwdriver, or, if large, into a cutting chisel for metals, after which it can be renovated and so on, as long as the file stands recutting.—*Work.*

A writer on strains in girders, referring to the amount of movement of iron girders due to expansion and contraction under extreme variations of temperature, observes that for iron and steel the coefficient or rate of expansion is nearly 1 inch for 100° Fahr. of heat for every 100 feet in length. He says: "In order to provide for all contingencies it is the general practice to allow for a vibration of 150° Fahr., or a movement equal to 1½ inch for every 100 feet in length."

Water at high temperature cannot be raised any considerable distance by suction, as the vapor discharged from the water so heated follows the receding pistons of the pump and resists the entrance of the water; consequently to pump hot water always place the supply above the pump, so that it will be supplied from a head.

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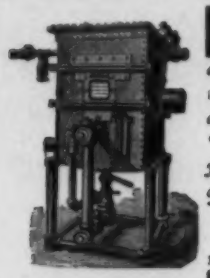

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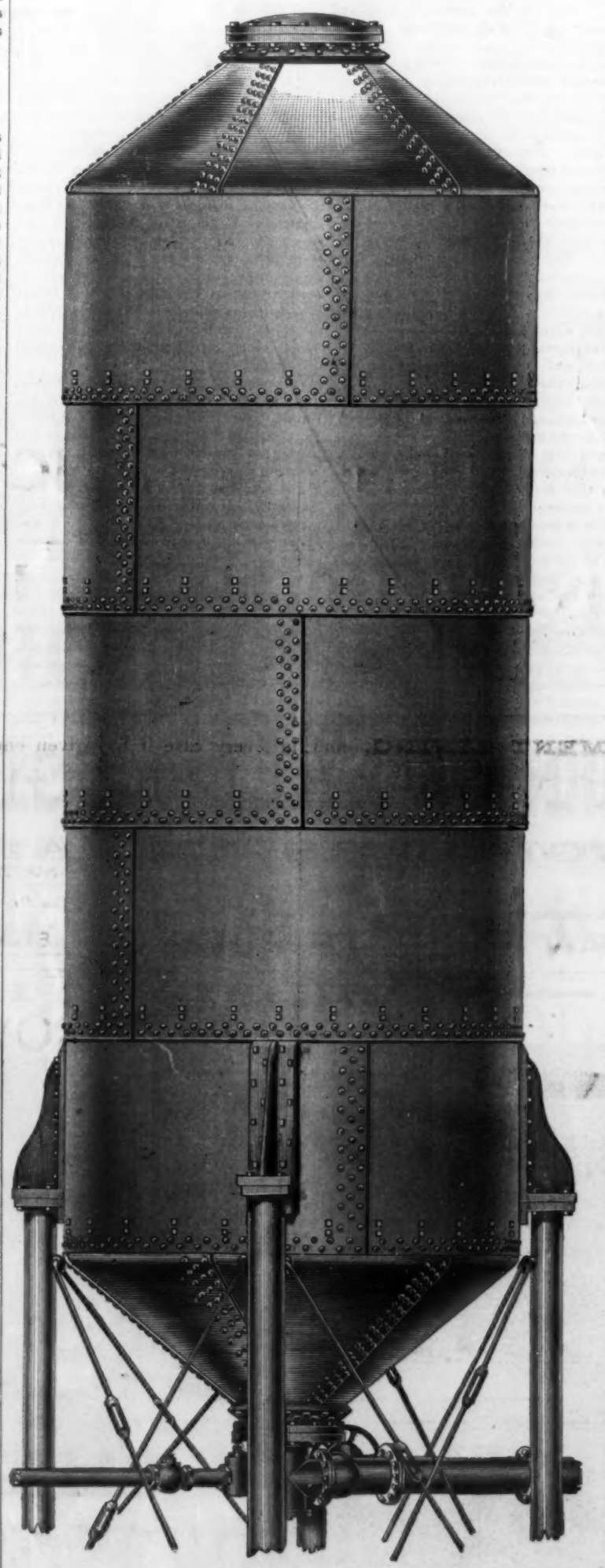

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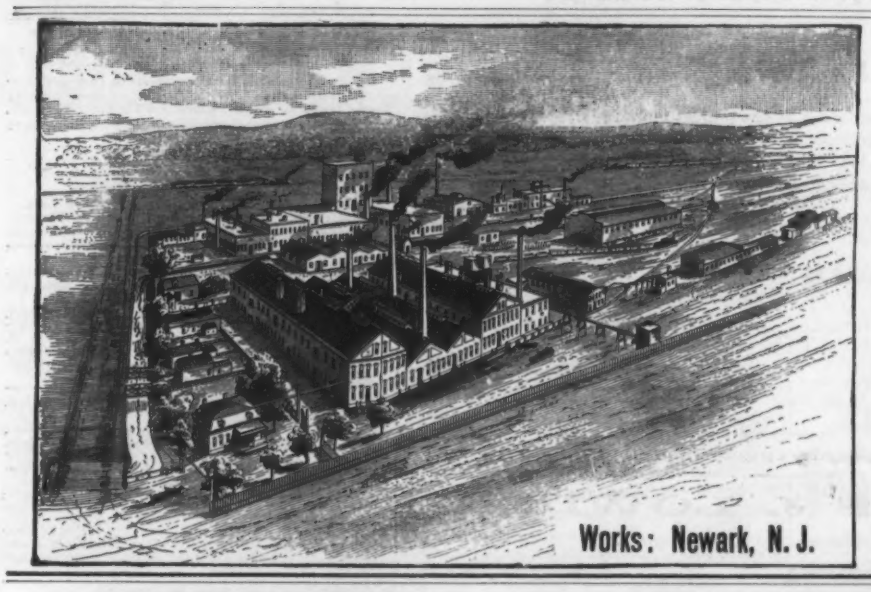
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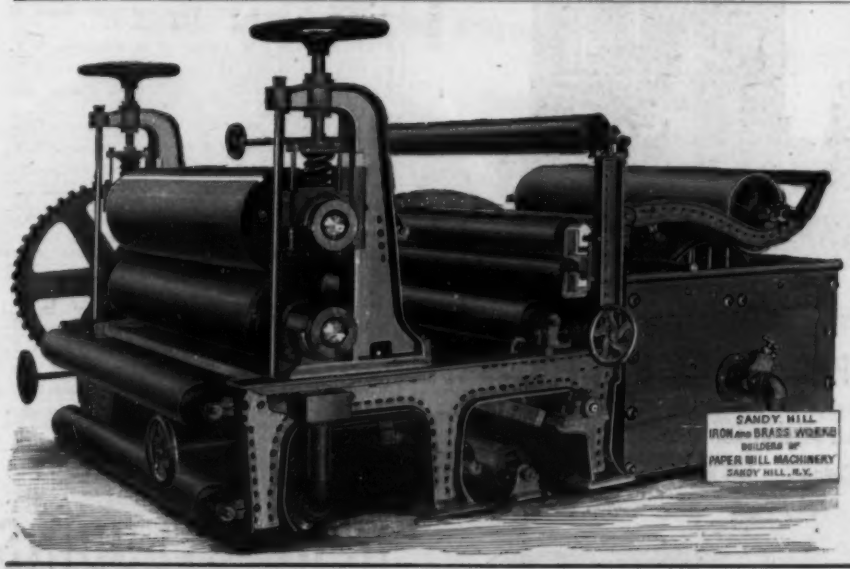

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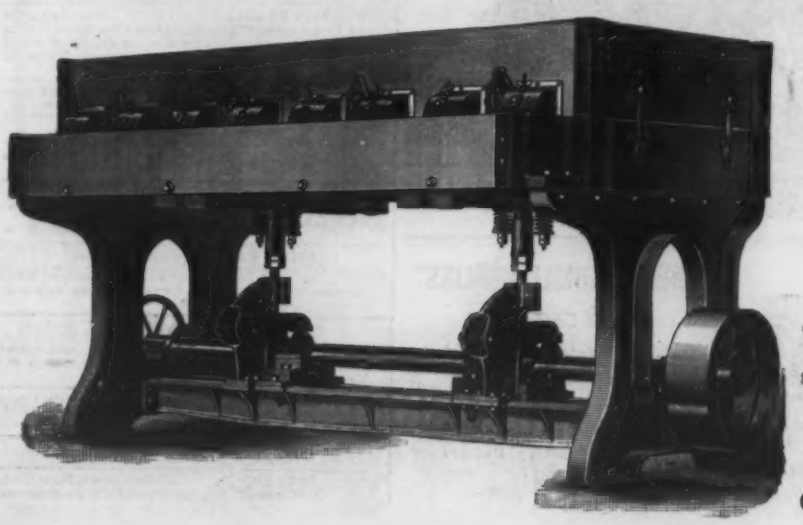

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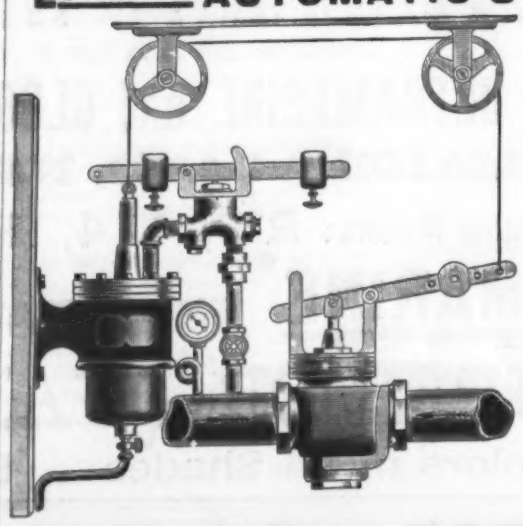

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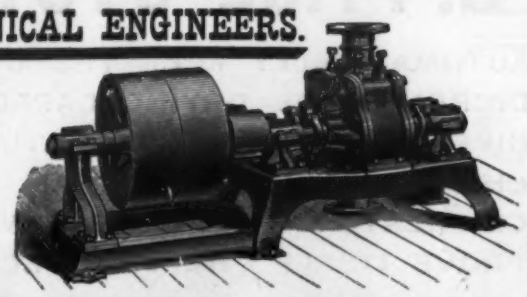

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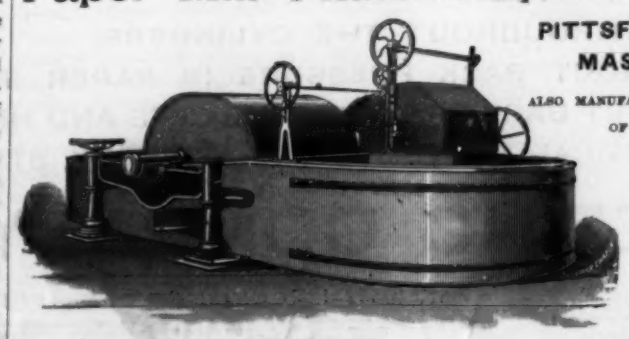

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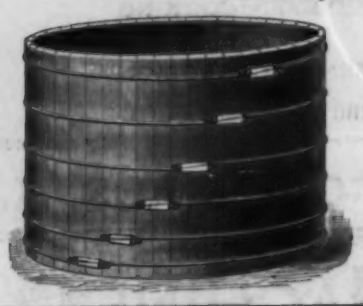

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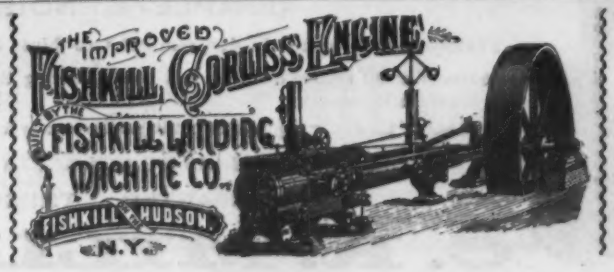

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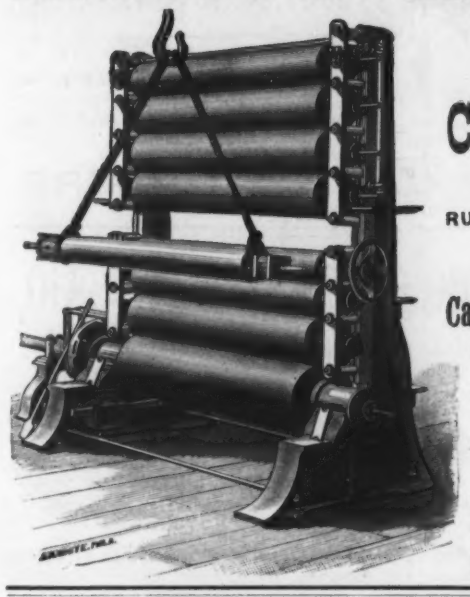

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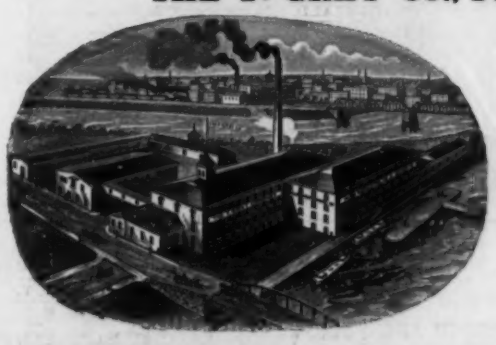

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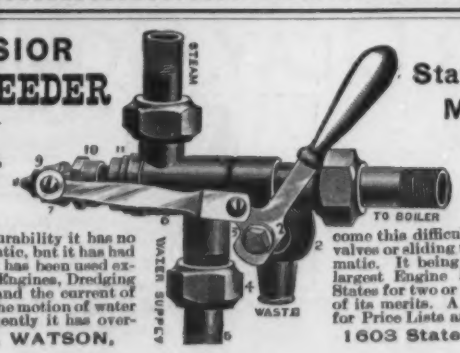

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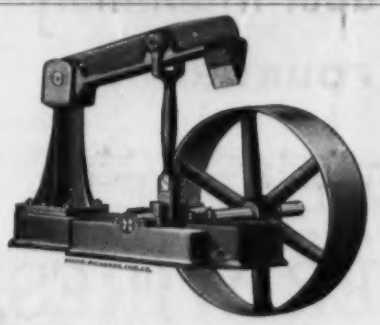

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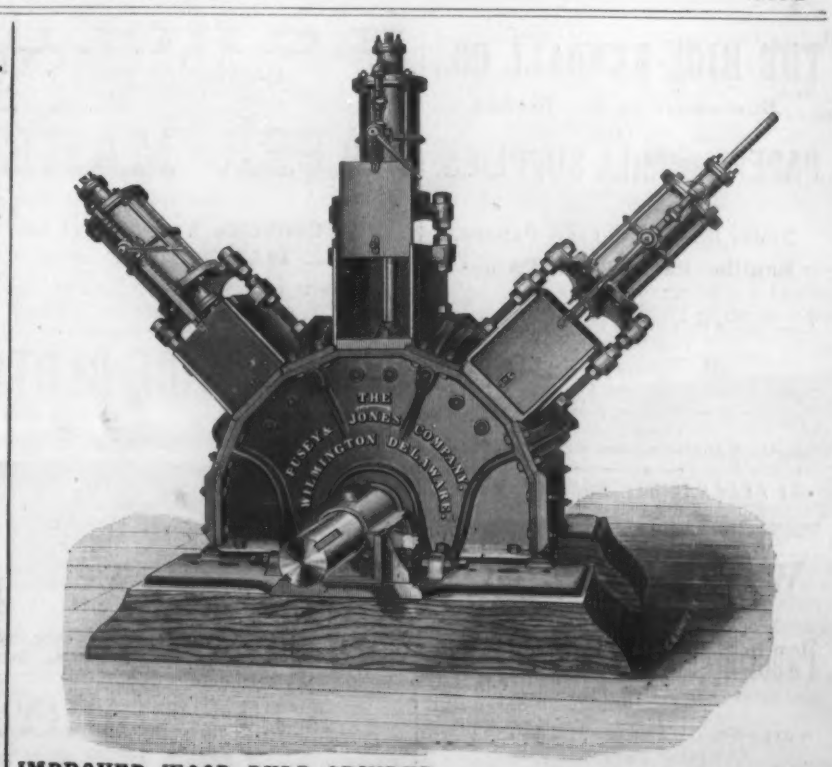

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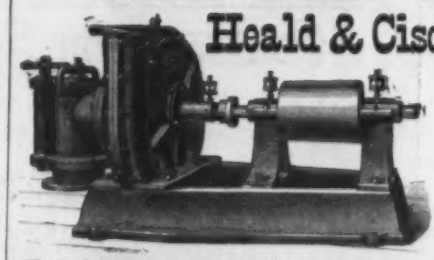

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